



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

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रिफ़ाइनरीज़ डिवीज़न
Refineries Division

Ref No: PR/HSE/2026/EC Compliance/1

Date: 17.07.2026

To,
The Additional Director(S),
Ministry of Environment, Forest & Climate Change, Govt. of India,
Regional Office (NR), Bays No. 24-25, Sector 31-A, Dakshin Marg,
Chandigarh- 160047

Subject: Six Monthly Environmental Clearances (EC) Compliance Report (Jan'2026 to June'2026)- Panipat Refinery and Petrochemical Complex.

Respected Sir,

Enclosed please find herewith the Six Monthly Environmental Clearances (ECs) Compliance Report- Panipat Refinery and Petrochemical Complex for the period of Jan'2026 to June'2026 of the MoEF&CC stipulations w.r.t. following EC letters;

1. EC Letter No. J-11011/27/91-IA II(I) dated 16.07.1992 for setting up of a grass root refinery at Karnal district by Indian Oil Corporation Limited.
2. EC Letter No. J.11011/60/2000-IA.II dated 09.04.2001 for Expansion of Panipat Refinery (PREP) from 6 MMTA to 12 MMTA.
3. EC Letter No. J.11011/52/2000-IA.II dated 30.04.2001 for Integrated Paraxylene and Purified Terephthalic Acid Projects at Panipat by M/s IOCL.
4. EC Letter No. J.11011/9/2001-IA II (I) dated 06.12.2001 for MS Quality Up-gradation Project at Panipat Refinery by IOCL.
5. EC Letter No. J.11011/52/2000-IA II (I) dated 20.01.2003 for Modification in Plant layout of Paraxylene and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP).
6. EC Letter No. J.11011/7/2004-IA II (I) dated 09.08.2004 for expansion of Panipat Refinery (From 12 MMTA to 15 MMTA) and Setting up of Indalin+ unit at Panipat Refinery Complex of IOCL, Panipat Refinery Haryana.
7. EC Letter No. J.11011/177/2016-IA II (I) dated 26th March, 2018 for BS-VI Fuel Quality up-gradation and expansion of PX/PTA plant at Panipat Refinery & Petrochemical Complex (PRPC), Panipat (Haryana) by M/s Indian Oil Corporation Limited.
8. EC Letter No. IA-J-11011/43/2018-IA- II (I) dated 13.11.2019 for installation of 100 KLPD Ligno-Cellulosic 2G Ethanol Plant at Baholi, Block Madlauda, Panipat Refinery road, District Panipat (Haryana) By M/S Indian Oil Corporation Limited.
9. EC Letter No. J-11011/78/2018-IA- II (I) dated 25.11.2019 for setting up 128 KL per day Ethanol Production Plant by M/s Indian Oil Corporation Ltd. (IOCL) In Panipat Refinery & Petrochemical Complex at Panipat, Haryana.
10. EC Letter No. J-11011/177/2016- IA II(I) dated. 03.12.2021 for Panipat Refinery capacity expansion from existing 15 MMTA to 25 MMTA within the existing refinery complex.

Thanking you,

Yours Faithfully

(Amarendra Senapati)

General Manager (HSE&PSM)

For and on behalf of IOCL

Panipat Refinery & Petrochemical Complex

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

General Manager (HSE&PSM)

पानीपत रिफ़ाइनरी (आई.ओ.सी.एल.) 132140

Panipat Refinery (I.O.C.L.) 132140

Copy To: 1. The Regional Directorate, CPCB, Chandigarh
2. The Chairman, HSPCB, Panchkula
3. The Regional Officer, HSPCB, Panipat

INDEX

S. No.	EC letter /Environmental monitoring reports	EC Compliance Status/Reports
1	EC Letter No. J-11011/27/91-IA II(I) dated 16.07.1992 for setting up of a grass root refinery at Karnal district by Indian Oil Corporation Limited.	Attached as Annexure-1
2	EC Letter No. J.11011/60/2000-IA.II dated 09.04.2001 for Expansion of Panipat Refinery (PREP) from 6 MMTPA to 12 MMTPA.	Attached as Annexure-2
3	3EC Letter No. J.11011/52/2000-IA.II dated 30.04.2001 for Integrated Paraxylene and Purified Terphthalic Acid Projects at Panipat by M/s IOCL.	Attached as Annexure-3
4	EC Letter No. J.11011/9/2001-IA II (I) dated 06.12.2001 for MS Quality Up-gradation Project at Panipat Refinery by IOCL.	Attached as Annexure-4
5	EC Letter No. J.11011/52/2000-IA II (I) dated 20.01.2003 for Modification in Plant layout of Paraxylene and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP).	Attached as Annexure-5
6	EC Letter No. J.11011/7/2004-IA II (I) dated 09.08.2004 for expansion of Panipat Refinery (From 12 MMTPA to 15 MMTPA) and Setting up of Indalin+ unit at Panipat Refinery Complex of IOCL, Panipat Refinery Haryana.	Attached as Annexure-6
7	EC Letter No. J.11011/177/2016-IA II (I) dated 26th March, 2018 for BS-VI Fuel Quality up-gradation and expansion of PX/PTA plant at Panipat Refinery & Petrochemical Complex (PRPC), Panipat (Haryana) by M/s Indian Oil Corporation Limited.	Attached as Annexure-7
8	EC Letter No. IA-J-11011/43/2018-IA- II (I) dated 13.11.2019 for installation of 100 KLPD Ligno-Cellulosic 2G Ethanol Plant at Baholi, Block Madlauda, Panipat Refinery road, District Panipat (Haryana) By M/S Indian Oil Corporation Limited.	Attached as Annexure-8
9	EC Letter No. J-11011/78/2018-IA- II (I) dated 25.11.2019 for setting up 128 KL per day Ethanol Production Plant by M/s Indian Oil Corporation Ltd. (IOCL) In Panipat Refinery & Petrochemical Complex at Panipat, Haryana.	Attached as Annexure-9
10	EC Letter No. J-11011/177/2016- IA II (I) dated. 03.12.2021 for panipat refinery capacity expansion from existing 15 MMTPA to 25 MMTPA within the existing complex.	Attached as Annexure-10
11	Ambient Air quality data.	Attached as Annexure-11
12	Stack Emission data	Attached as Annexure-12
13	Effluent quality data	Attached as Annexure-13
14	Noise Monitoring data	Attached as Annexure-14

COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR SETTING UP OF A GRASSROOT REFINERY AT KARNAL, DISTRICT BY INDIAN OIL CORPORATION LIMITED - EC Letter no. J-11011/27/91-IA.II(I) dated 16.07.1992

SN	Stipulation	Compliance
1.	The project authority must strictly adhere to the stipulations laid down by the State Pollution Control Board and State Government.	Complied
2.	Any expansion of the plant, either with the existing product mix or new products can be taken up only with the prior approval of this ministry.	Complied
3.	Sulphur recovery unit with more than 90% Sulfur Recovery should be installed and commissioned before the project is completed, and measure for its continuous operation must be taken. Techno-economic feasibility study for additional standby sulphur recovery system may be initiated after the installation of first unit.	Complied Panipat Refinery has Sulphur Recovery Units with more than 99% Sulfur Recovery efficiency.
4.	Low Sulfur fuel (Sulphur content not exceeding 1%) should be used in the boilers/furnaces.	Complied Fuel with sulphur content $\leq 0.5\%$ is used in the boilers/furnaces if required.
5.	Low NO _x burners should be used to avoid excessive formation of NO _x .	Complied Low NO _x burners have been installed in the process heaters, Boilers, furnaces etc.
6.	Total emission of SO ₂ from the refinery should not exceed 1 Ton/hr.	Complied SO ₂ emission (actual SO ₂ emission, 250-900 kg/hr) from the Refinery is well within the limit.
7.	The gaseous emissions (SO ₂ , NO _x etc.) from various process units should conform to the standards prescribed by the concerned authorities, from time to time. At no time the emission levels should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restarted until the control measure are rectified to achieve the desired efficiency.	Complied
8.	Adequate number (a minimum of 7) of air quality monitoring stations should be set up in the down-wind direction as well as where maximum ground level concentration is anticipated. Stack emission should be monitored by setting up of an automatic continuous stack monitoring unit. The data on stack emission should be submitted to the State Pollution Control Board once in three months and to this Ministry once in six months along with the statistical analysis. The air quality monitoring station should be selected on the basis of modeling exercise to represent the short-term ground level concentrations.	Complied Total 11 nos. of CAAQMS (2 nos. in Panipat city, 1 no. in Refinery township, 7 nos. in Refinery & 1 in Polishing Pond area) are in operation. These were set up in consultation with HSPCB. All the CAAQMS stations are connected to the CPCB AAQMS server. For all stacks: SO ₂ , NO _x , CO & PM analyzers are available and connected to CPCB/HSPCB server. Data on stack emission are submitted to HSPCB/MoEFCC as per frequency mentioned.

SN	Stipulation	Compliance
9.	Fugitive emissions of hydrocarbons from storage tanks etc. should be minimized by adopting necessary measures.	Complied Floating roof tanks are provided to store volatile hydrocarbons.
10.	Fugitive emission should be regularly monitored and record maintained.	Complied Fugitive emission monitoring for Hydrocarbon and Benzene is being carried out through MoEF&CC approved agency.
11.	There should be no change in the stack design without the approval of the State Pollution Control Board. Alternate pollution control system and proper design in the stack should be provided to take care of excess emissions due to failure in any system of the plant.	No change in stack design shall be done without the approval of SPCB. Proper design and alternate Pollution control system is provided Complied to take care of excess emissions in case of failure in any system of the plant.
12.	The height of stacks attached to AVU, FCCU and TPS etc. should not be less than 100 m.	Implemented
13.	Total fresh water consumption (Industrial as well as township) should not exceed 8 MGD. Ground Water should not be tapped for this purpose.	8 MGD water allocated for 6 MMTPA Refinery. However, further EC granted to Refinery expansion from 6 to 12 MMTPA (J.11011/7/2004-IA-II (I) dated 09.08.2004) Fresh water allocation increased to 30 cusec.
14.	The project authorities must recycle wastewater to the maximum extent possible (at least 25% to 30% to start with). The treated effluent coming out of the plant must meet MINAS.	Complied ETP-I and II Treated effluent meeting Refinery MINAS parameter is "Recycled and Reused" as feed to RO plant and make up water to Cooling Tower.
15.	Adequate number of effluent quality (oil & Grease, COD, BOD, suspended Solids, Phenols, Sulphides, pH and Flow) monitoring stations must be set up in consultation with State Pollution Control Board.	Effluent quality as mentioned is being monitored at various stages of Effluent Treatment Plant. Also final Treated Effluent Quality parameters (pH, BOD, COD & TSS) are connected online to CPCB/HSPCB server.
16.	Maximum recovery of oil from the sludge should be done and residual oily sludge should be incinerated.	The raw oily sludge generated from the Refinery is subjected to Oil recovery / Melting Pit treatment for recovery of oil. The recovered oil is recycled back with crude oil for processing. - The residual sludge is disposed off through confined Bio-remediation. - Part of the sludge is processed in Coker unit.
17.	The project authorities must prepare a scheme for solid and hazardous waste disposal. The plan for disposal duly approved from the State Pollution Control Board should be submitted to this Ministry within one year and adequate space should be provided for it within the plant premises.	Complied A common hazardous waste disposal site is developed in the state by Haryana Environmental Management Society (HEMS) in consultation with Haryana State Pollution Control Board. Panipat Refinery is the member of this society.
18.	A green belt of at least 500 m width and adequate density should be developed and maintained. Selection of the species should be done in consultation with the State Forest Department. A detailed green belt development plan taking into account attenuation factors, soil characteristics etc. should be prepared and submitted to this Ministry within six months.	Complied Greenbelt of 500 m width have been developed and maintained after consultation with State Forest Department.

SN	Stipulation	Compliance												
19.	A detailed risk analysis study based on Maximum Credible Accident (MCA) analysis should be done and submitted to this Ministry once the process design/technology and layout is finalized. Based on this, a Disaster Management Plan has to be prepared and after approval by the concerned Nodal Agency, should be submitted to this ministry within six months. The impact zone under no circumstances should cross the plant premises.	A Comprehensive Risk Analysis is conducted Report has been submitted. On-site Disaster Management Plan based on this Risk Analysis is also prepared which is accredited from approved Third Party Inspection agency of PNGRB.												
20.	A 'no development zone' of minimum 5km radius in between the refinery and the Panipat town should be provided. Where only restricted growth on nonpolluting industries may be allowed (Action – State Govt.)	Action by State Government. Letter dated 16.05.2020 and subsequent letter dated 10.01.2024 sent from PR to DC, Panipat requesting enforcement of this condition.												
21.	No tree should be cut from the site without prior written order of the competent authority.	Complied												
22.	The industrial township should be located on the northern side of the refinery i.e. in the up-wind direction.	Complied												
23.	A detailed Rehabilitation Plan for the affected people should be prepared and submitted to this Ministry within 3 months.	Complied												
24.	Contractor's labourers must leave place after the construction work is over to avoid creation of slum in the adjoining areas of the refinery and township.	Complied												
25.	A comprehensive EIA must be prepared and submitted to this Ministry by September, 1993 covering regional implications and 'no development zone' aspects.	Complied												
26.	Feasibility of using 20 tonner trucks may be studied / assessed wherever road transport is being envisaged and report submitted to this Ministry within three months.	Bulk Movement of Products is through Pipeline and Rail.												
27.	Necessary approval may be obtained from the Regulatory Authority as per Section 5(2) and 5(3) of the Hazardous Wastes (Management and Handling) Rules, 1989 of the Environment (Protection) Act, 1986.	Complied												
28.	The State Govt. should prepare a Master Plan for the region to avoid haphazard growth of industries and human settlements in the area.	Action by State Government.												
29.	The project authority must set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel, who will directly report to the Chief Executive.	Complied NABL approved laboratory is established within the refinery.												
30.	A separate Environment Management Cell with suitably qualified people to carry out various functions should be set up under the control of Sr. Executive, who will report directly to the Head of the organization.	Complied												
31.	The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this Ministry.	Implemented. Year wise expenditure: (INR in Lakhs) <table><tr><th colspan="2">FY: 2024-25</th><th colspan="2">FY: 2025-26</th></tr><tr><th>Recurri ng</th><th>Non- recurrin g</th><th>Recurr ing</th><th>Non- recurring</th></tr><tr><td>4456.6</td><td>229.0</td><td>5594.9</td><td>224.0</td></tr></table>	FY: 2024-25		FY: 2025-26		Recurri ng	Non- recurrin g	Recurr ing	Non- recurring	4456.6	229.0	5594.9	224.0
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Compliance status with respect to the EC conditions stipulated in the letter for Panipat Refinery Expansion Projects (PREP) from 6 MMTPA to 12 MMTPA – EC letter no. J.11011/60/2000-IA.II dated 09.04.2001 :

S N	Conditions stipulated in the EC letter	Status
1.	The company should strictly adhere to the stipulations made by MOEF vide O.M. No. J.11011/76/96-IAII dated 5 th March, 1997	Complied
2.	a) The total SO ₂ emission from the entire Refinery complex should not exceed 1000 kg/hr even after proposed expansion.	Complied
	b) The gaseous emissions (SO ₂ , NO _x , HC, CO) and particulate matters, from various process units should conform to the standards prescribed under Environmental (Protection) Rules, 1986 or norms stipulated by SPCB whichever is most stringent.	Complied
	c) At no time, the emission level should go beyond the stipulated standards.	Complied
	d) In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied
3.	Sulphur recovery units with more than 99% efficiency shall be provided.	Complied Sulphur recovery units with more than 99% efficiency have been installed & are operational.
4.	a) Adequate ambient air quality monitoring stations SO ₂ , NO _x , HC should be set up in the Refinery area in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind.	Complied 11 nos. of CAAQMS (7 nos. in Refinery, 2 nos. in Panipat city, 1 no. each in Refinery Township, and Polishing Pond area) are in operation. These were set up in consultation with HSPCB. All CAAQMS are connected to the CPCB AAQMS server. Also mobile van for ambient air quality monitoring is in place.
	b) The monitoring network must be decided based on making exercise to represent short term GLCs.	Complied
	c) In addition, a mobile van with adequate facilities to monitor ambient air quality outside the Refinery premises should be provided.	Complied Mobile van with adequate facilities for ambient air quality monitoring is in place and used to monitor ambient air quality outside the refinery.
	d) Continuous on-line stack monitoring equipment should be installed for measurement of SO ₂ , NO _x , CO & PM.	For all stacks: SO ₂ , NO _x , CO & PM analyzers are available and connected to CPCB / HSPCB server.
5.	a) Fugitive emission of HC from product storage tank yard, crude oil tanks etc, must be regularly monitored.	Complied Fugitive emission monitoring for Hydrocarbon and Benzene is being carried out through MoEF&CC approved agency.
	b) Sensors for detecting HC leakages should also be provided at strategic locations.	Hydrocarbon leak detectors installed at strategic locations.

S N	Conditions stipulated in the EC letter	Status
6.	a) As per the commitment given, there will be no discharge of treated effluent into Thirana drain.	Treated effluent from ETP-1 & ETP-2 is reused as feed to RO plant and as make up to Cooling Tower. Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
	b) The liquid effluent generated from the Refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules.	Liquid effluent generated from Refinery & PX-PTA Petrochemical Complex is being treated in Waste Water Treatment Plant(s) which are meeting applicable Refinery & Petrochemical MINAS standards. Treated effluent from ETP-1 & ETP-2 is reused as feed to RO plant and as make up to Cooling Tower. Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
	c) The entire treated wastewater should be recycled for reuse in the plant operation and green belt development so as to maintain zero discharge.	ETP-1 & ETP-2 treated effluent is recycled and reused as feed to RO plant and as make up to Cooling Tower. Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
7.	a) Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbance and/or ETP failure.	Complied.
	b) The concerned units must be shut down in case of effluent quality exceeding the prescribed limits.	Complied.
8.	a) The company should adopt mounded storage for LPG.	Complied. Mounded storage is used for LPG storage.
	b) The recommendations made in the Rapid Risk Assessment Report must be incorporated while firming up the plant layout and equipment design.	Complied. The recommendations of the Rapid Risk Assessment study have been incorporated in the plant layout and equipment design.
	c) The company must prepare a comprehensive risk assessment/analysis of the Refinery and associated facilities once the engineering design and layout is frozen.	Complied.
	d) Based on this, on-site and off-site emergency preparedness plan must be prepared.	Complied. Onsite and Offsite Emergency Preparedness plan have been prepared and certified thru' PNGRB approved agency for Panipat Refinery.

S N	Conditions stipulated in the EC letter	Status
	e) Approval from the nodal agency must be obtained before commissioning the project.	Complied.
9.	The drawl of water from the Munak Head-works should not exceed 30 cusecs even after the proposed expansion.	Complied.
General conditions:		
S N	Conditions stipulated in the EC letter	Status
1.	The project authorities must strictly adhere to the stipulations made by the Haryana State Pollution Control Board and the State Government.	Complied
2.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forest.	Complied
3.	In case of deviations or alterations in the project proposed from those submitted to this Ministry for Clearance, a fresh reference should be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Complied
4.	Data on ambient air quality, stack emission as well as fugitive emissions of HC must be regularly monitored and submitted to CPCB once in 3 months and to Ministry's Regional Office once in 6 months.	Complied. Mentioned reports are being submitted to MOEF&CC once in 6 months. Stack analyzers are online connected with CPCB/HSPCB server.
5.	Influent and effluent quality monitoring stations should be set up in consultation with the State Pollution Control Board. Regular monitoring should be carried out for the MINAS parameters.	Influent and Effluent quality is being monitored at various stages of Effluent Treatment Plants. Final Treated Effluent Quality parameters (pH, BOD, COD & TSS) are also connected online to CPCB/HSPCB server. Effluent monitoring reports are submitted to HSPCB on monthly basis.
6.	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended, on 3 rd October, 1994. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire & Safety Inspectorate etc. must be obtained.	Complied.
7.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 1989. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	Complied. Hazardous Waste Authorization (HWA) for collection, storage and disposal of hazardous wastes is obtained from the HSPCB.
8.	Occupational health surveillance program should be undertaken as regular exercise for all the employees, especially for those engaged in handling hazardous substances.	Complied.
9.	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (Day time) and 70 dBA (night time)	Complied. The Refinery has provided silencers on compressor discharge, acoustic leggings on turbo generators & ejectors and acoustic chambers at the burners. The ambient noise level meets the standards.

S N	Conditions stipulated in the EC letter	Status												
10.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and risk analysis report.	Complied.												
11.	The project proponent should have a scheme upliftment in the nearby villages with reference to contribution in road construction, education of children, festivals, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever possible both for technical and non technical jobs.	Complied Social upliftment and community development has been properly taken care as per IOCL's Corporate Social Responsibility Policy through following CSR activities. – Promoting Sanitation – Environment Sustainability/ Renewable Energy Sources – Rural Development/ Promoting Preventive Healthcare/ Promotion of Sports – Promoting Education – Enhancement of Vocational Skills – Empowering Women – Welfare of Underprivileged												
12.	A separate environmental management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitored functions.	Complied Separate Environment Management Cell is in place.												
13.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	Implemented. Year-wise expenditure:(INR in Lakhs) <table><tr><th colspan="2">FY:2024-25</th><th colspan="2">FY:2025-26</th></tr><tr><th>Recurring</th><th>Non-recurring</th><th>Recurring</th><th>Non-recurring</th></tr><tr><td>4456.6</td><td>229.0</td><td>5594.9</td><td>224.0</td></tr></table>	FY:2024-25		FY:2025-26		Recurring	Non-recurring	Recurring	Non-recurring	4456.6	229.0	5594.9	224.0
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14.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh / State Pollution Control Board / Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Complied. Six monthly compliance reports along with monitoring data are being submitted as stated.												
15.	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locally concerned informing that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry and Forests at http://www.envfor.nic.in . the advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Ministry's Regional Office.	Complied												
16.	The project authorities should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied												

Integrated Paraxylene and Purified Terphthalic Acid Projects at Panipat by M/s IOCL – Environmental Clearance MOEF, N. Delhi letter no. J.11011/52/2000-IA.II dated 30.04.2001

SN	Conditions stipulated in the EC letter	Status
1	a) The gaseous emission (SO ₂ , NO _x and HC, Benzene) from the various process units should conform to the standards prescribed under environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent.	Complied. Emission from the stack is being monitored online and from MoEF&CC approved lab on Bi-monthly basis. Stacks are connected online to CPCB/HSPCB server with parameters such as SO ₂ , NO _x , CO & PM.
	b) At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until; the control measures are rectified to achieve the desired efficiency.	Complied.
2	a) Adequate ambient air quality monitoring stations (SPM, SO ₂ , NO _x , HC and Benzene) should be set up in the petrochemical complex in consultation with SPCB, based on occurrence of maximum ground level concentration and downwind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs	Complied. Out of 11, CAAQMS two Ambient Air Monitoring stations set up in PX-PTA plant area. The location of these is finalized after consultation with HSPCB. These CAAQMS stations are connected to the CPCB AAQMS server.
	b) Continuous on-line stack monitoring equipment should be installed for measurement of SO ₂ and NO _x .	Complied. PX-PTA stacks are connected online to CPCB/SPCB server with parameters such as SO ₂ , NO _x , CO & PM.
3	a) Fugitive emission of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored.	Complied. Fugitive emission monitoring for Hydrocarbon and Benzene is being carried out through approved agency.
	b) Sensors for detecting HC leakage should also be provided at strategic locations.	Complied. Hydrocarbon leak detectors installed at strategic locations.
4	a) Liquid effluent generated from the petrochemical complex should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules (MINAS standards).	For Treating liquid effluent generated from Petrochemical complex separate ETP has been installed. PTA-ETP treated effluent meets the petrochemical MINAS. PTA ETP envisages Aerobic and Anaerobic Biological systems for treatment and the final effluent meets Petrochemical MINAS.
	b) The BOD of the treated effluent should not exceed 30 mg/l at any point of time.	BOD is being maintained below 30 mg /l.
	c) The Company must undertake maximum recycling/ reusing of the treated effluent for process purposes in addition to green belt development and also adopt adequate water conservation measures.	Process Licensor M/s INVISTA has confirmed that "Recycle & Reuse" of PTA treated effluent is not feasible. PX-PTA has permission for discharge of 255m ³ /hr treated effluent from PTA-ETP to Thirana drain.

	d) As per the commitment given the total quantity of treated effluent discharged into Thirana drain should not exceed 255 m ³ /hr.	The discharge of PTA ETP treated effluent into Thirana Drain is being restricted well below 255 m ³ /hr.
	e) The effluent quality at the discharge point must also be monitored periodically by an independent agency authorized by CPCB and report of the independent agency should be submitted to Ministry's Regional office at Chandigarh/CPCB/ HSPCB.	Effluent Quality of PTA ETP is monitored monthly by an MOEF&CC authorized independent agency and report is being submitted to HSPCB (Monthly) and to RO MoEF&CC (Six-Monthly).
	f) The Company shall fully abide by the Hon'ble Supreme Court orders on regulation of industrial discharge to River Yamuna and it's canals / drains.	Complied.
5	a) Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbances and or ETP failure.	Guard ponds of sufficient holding capacity are provided.
	b) The concerned units must be shut down in cases of effluent quality exceeding the prescribed limits.	Noted
	General Conditions	
SN	Conditions stipulated in the EC letter	Status/Action plan
-		
1	The project authority must adhere to the stipulations made by Haryana State Pollution Control Board and State Government.	Complied
2	No expansion or modification of the plant should be carried out without prior approval of Ministry.	Noted
3	Data on ambient air quality and stack emissions as well as fugitive emissions of HC and Benzene from product storage tanks yard, naphtha tanks etc. must be regularly monitored and submitted to CPCB/ SPCB once in 3- months and to Ministry (Regional Office, Chandigarh) one in 6-months.	Complied. Mentioned reports are being sent to MOEF&CC once in 6 months and to HSPCB on monthly basis. Stack analyzers are connected online with CPCB/HSPCB server.
4	The effluent quality before and after treatment should be regularly monitored. The frequency of monitoring and number of influent and effluent quality monitoring stations should be set up in consultation with the State PCB. The monitored data should be submitted to CPCB/ SPCB once in 3-months and to Ministry (Regional Office, Chandigarh) once in 6-months.	Complied Influent and Effluent quality is being monitored at various stages of Effluent Treatment Plants also Final Treated Effluent Quality parameters (pH, BOD, COD & TSS) also connected online to CPCB/HSPCB server. Mentioned reports are being submitted to MOEF&CC once in 6 months and to HSPCB on monthly basis.
5	Handling, manufacturing, storage and transportation of hazardous chemicals should be carried out in accordance with the Manufacture, Storage & Import of Hazardous chemicals Rules, 1989, as amended in 1991. Permissions from State and Central nodal agencies in this regard must be obtained.	Complied
6	Hazardous wastes, if any, must be handled and disposed as per Hazardous waste (Management and Handling) Rules, 1989. Authorization from State Pollution Control Board in this regard must be obtained.	Complied Authorization for Hazardous Waste has been obtained from HSPCB which is valid up to 30.09.2028

7	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	Complied.												
8	The overall noise levels in and around the plant area should be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).	Complied. Silencers are provided on compressor discharge, acoustic leggings on turbo generators & ejectors and acoustic chambers at the burners. The ambient noise level meets the standards.												
9	Occupational Health Surveillance of the workers should be done on regular basis and records maintained	Complied												
10	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP and risk analysis report.	Complied												
11	The project proponent should have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction ,education of children festivals, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people especially the displaced people whenever and wherever possible both for technical and non-technical jobs.	Complied Social upliftment and community development has been properly taken care as per IOCL's Corporate Social Responsibility Policy through following CSR activities. – Promoting Sanitation – Environment Sustainability/ Renewable Energy Sources – Rural Development/ Promoting Preventive Healthcare/ Promotion of Sports – Promoting Education – Enhancement of Vocational Skills – Empowering Women – Welfare of Underprivileged												
12	A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions should be set up under the control of senior executive.	Complied Separate environment management cell is in place.												
13	The company must obtain ISO-14000 certification within a time frame of 5 years or so after the commissioning.	ISO-14000 certification has been obtained. Complied												
14	The funds earmarked for the environmental protection measures should not be diverted for any other purpose and year-wise expenditure should be submitted to this Ministry (Regional Office, Chandigarh/CPCB/SPCB).	Implemented. Year-wise expenditure: (INR in Lakhs) <table><tr><th colspan="2">FY:2024-25</th><th colspan="2">FY:2025-26</th></tr><tr><th>Recurring</th><th>Non-recurring</th><th>Recurring</th><th>Non-recurring</th></tr><tr><td>4456.6</td><td>229.0</td><td>5594.9</td><td>224.0</td></tr></table>	FY:2024-25		FY:2025-26		Recurring	Non-recurring	Recurring	Non-recurring	4456.6	229.0	5594.9	224.0
FY:2024-25		FY:2025-26												
Recurring	Non-recurring	Recurring	Non-recurring											
4456.6	229.0	5594.9	224.0											
15	Six monthly status reports on the project vis-à-vis environmental measures should be submitted to this Ministry (Regional Office, Chandigarh/ CPCB/SPCB).	Complied. Six monthly compliance reports along with monitoring data are being submitted.												

16	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh/ State Pollution Control Board/ Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Will be adhered to.
17	The project proponent should advertise in at least two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearances by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry and Forests at http://www.envfor.nic.in	Complied
18	The Project Authorities should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied

**COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEF FOR MS
QUALITY UPGRADATION PROJECT AT PANIPAT REFINERY BY IOCL, - J-11011/9/2001-
IA. II (I) DATED 06.12.2001**

SN	EC Conditions	Compliance Status
1.	The company shall ensure strictly implementations / Compliance of the terms and conditions mentioned vide Ministry's letter no. J.11011/60/2000-IA II dated 9 th April, 2001.	Complied (Stipulations are being strictly adhered for 6 MMTPA EC condition).
2.	The company shall also ensure that total SO ₂ emission from the Panipat Refinery (Including expansion and MS Quality Improvement Project) will not exceed 1000 kg/hr.	Complied SO ₂ emission from the Panipat Refinery (including expansion and MS Quality Improvement Project) is well within the limit.
3.	The company shall comply with all recommendations made by Haryana SPCB vide consent order dated 24.01.2001.	Complied.
4.	The company shall comply with all recommendations made by EMP and risk Analysis reports.	Complied.
5.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh / State Pollution Control Board / Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Complied. Six monthly compliance reports along with monitoring data are submitted as stated.
6.	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locally concerned informing that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry and Forests at http://envfor.nic.in the advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Ministry's Regional Office.	Complied.
7.	The project authorities should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied.

The first part of the report deals with the general situation of the country and the progress of the work. It is followed by a detailed account of the work done during the year, and a summary of the results. The report is divided into two main parts, the first of which deals with the general situation of the country and the progress of the work, and the second of which deals with the detailed account of the work done during the year, and a summary of the results.

The second part of the report deals with the detailed account of the work done during the year, and a summary of the results. It is divided into two main parts, the first of which deals with the general situation of the country and the progress of the work, and the second of which deals with the detailed account of the work done during the year, and a summary of the results.

Modification in Plant Layout of Paraxylene and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP) by M/s IOCL – Reg. Environmental Clearance - J.11011/52/2000-IA II (I) dated 20.01.2003

SN	EC Conditions	Compliance Status
1	The company shall ensure strict implementation / compliance to the stipulations made by MOEF vide OM no. J-11011/60/2000-IA-II dated 9 th April, 2001 for expansion of Panipat Refinery from 6 MMTPA to 12 MMTPA and J-11011/52/2000-IA-II dated 30 th April, 2001 for integrated Paraxylene and Purified Terephthalic acid project at Panipat by M/s IOCL.	Complied.
2	Total SO ₂ emission after integration of PX-PTA project with PR/PREP shall not exceed 1275 kg/hr (i.e. 1000kg/hr. for PREP and 275 kg/hr from the proposed PX/PTA/CPP Project.)	SO ₂ emission is well within the limit. (Actual SO ₂ emission from the refinery is in the range of 250-900 kg/hr and from PX-PTA is in the range of 40-200 kg/hr)
3	As per the commitment given, the total quantity of treated effluent shall not exceed 255m ³ /hr from the proposed integration project.	Total quantity of treated effluent discharged into Thirana Drain is maintained well below 255m ³ /hr.
4	The company shall develop green belt in an area of 75 acres as per the original plan in the PX-PTA project area.	Complied.
5	The project authorities shall also comply with all the environmental protection measures and safeguards recommended in the EIA /EMP and risk analysis report submitted while seeking environmental clearance for the PREP and PX/PTA and PX/PTA/ PR project.	Complied.
6	As per the recommendations made in the Risk assessment study for the composite facility i.e. PX/PTA/PREP and associated facilities carried out by M/s KLG TNO Safety Technology Ltd., the various elements of safety management system should be reviewed and updated keeping in view the new facilities added to the Refinery Complex. These include: Process and facilities information and documentation; Process Hazard Analysis; Operation Procedures; Inspection and Maintenance and Onsite Emergency Management Plan.	Various elements of Safety Management System (SMS) has been reviewed and updated keeping in view the new facilities added. On-site Disaster Management Plan based on this Risk Analysis is also prepared which is accredited from PNGRB approved Third Party Inspection agency.
7	The project authorities must adhere to the stipulations made by the HSPCB for the PREP, PX/PTA projects and NOC granted for the installation of Captive Power Plant.	Complied.

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COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEF FOR EXPANSION OF PANIPAT REFINERY (FROM 12 MMTPA TO 15 MMTPA) AND SETTING UP OF INDALIN' UNIT AT PANIPAT REFINERY COMPLEX OF IOCL, PANIPAT REFINERY HARYANA J-11011/7/2004-IA. II (I) dated 09.08.2004

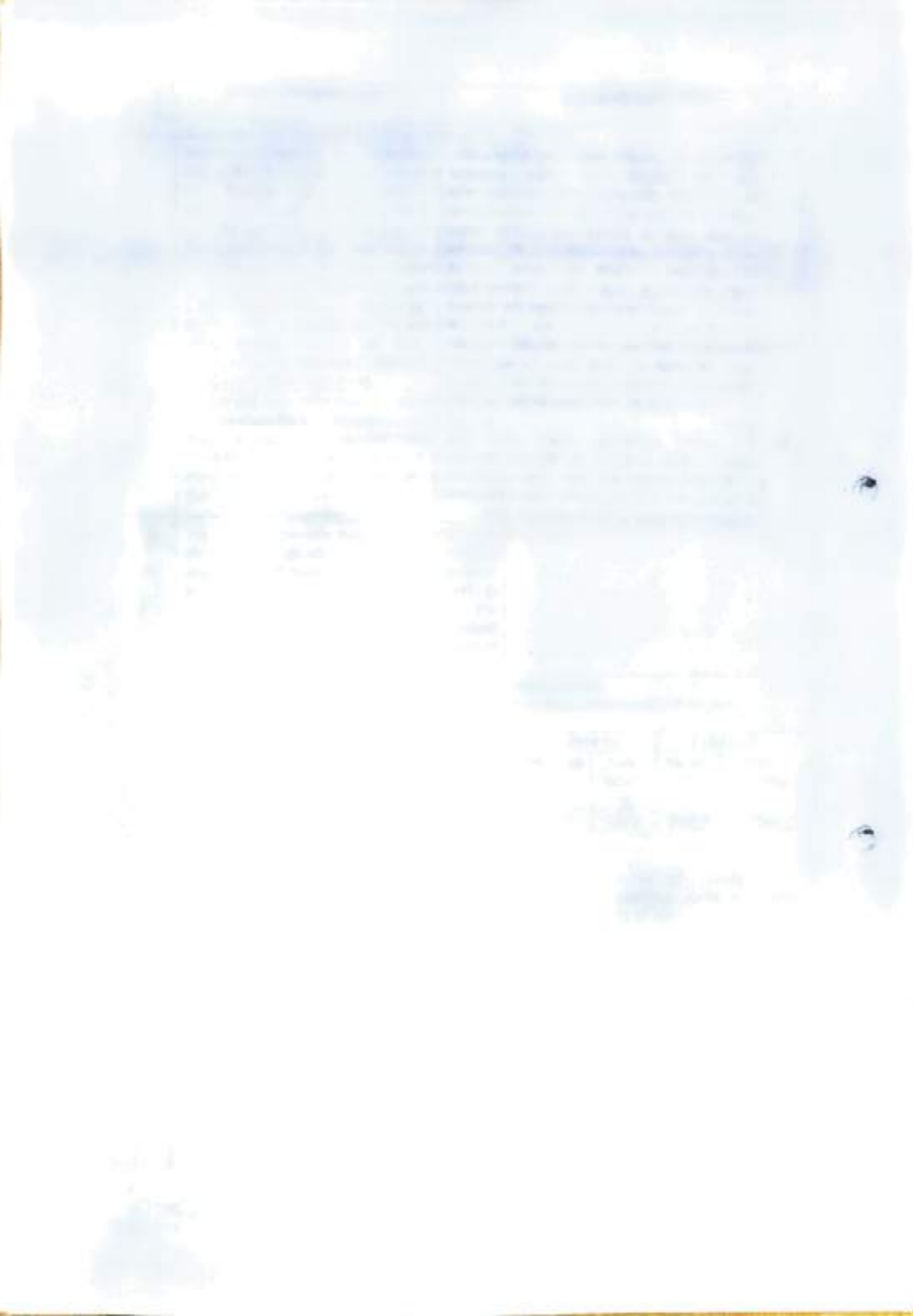
S N	EC Conditions	Compliance Status
1.	The company shall ensure strict implementation / compliance to the stipulations made by MOEF vide OM no. J-11001/60/2000-IA-II dated 9 th April, 2001 for expansion of Panipat Refinery from 6 MMTPA to 12 MMTPA	Complied
2.	The gaseous emissions (SO ₂ , NO _x and HC, Benzene) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level should go beyond the stipulated standards. In the event of failure pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied Emission from the stack is being monitored online and from approved lab on bi-monthly basis. All stacks are connected online to CPCB / HSPCB server for parameters such as SO ₂ , NO _x , CO & PM. Gaseous emission from various process units meets the prescribed standards.
3.	Adequate ambient air quality monitoring stations, (SPM, SO ₂ , NO _x and HC, Benzene) should be set up in the refinery complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment should be installed for measurement of SO ₂ and NO _x . Data on VOC should be monitored and submitted to the SPCB / Ministry.	11 nos. CAAQMS (7 nos. in Refinery, 2 nos. in Panipat city, 1 no. each in Refinery township and Polishing Pond area) are in operation. These were set up in consultation with HSPCB. Also mobile van for ambient air quality monitoring is in place. All CAAQMS are connected to CPCB AAQMS server. For all stacks: SO ₂ , CO, PM & NO _x analyzers are available and connected with CPCB server. Fugitive emission monitoring for Hydrocarbon and benzene is being carried out through approved agency. All reports are submitted to HSPCB as stated.
4.	Fugitive emission of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored. Sensors for detecting HC leakage should also be provided at strategic locations	Fugitive emission monitoring for Hydrocarbon and Benzene for product storage tanks and crude oil storage tanks is being carried out through approved agency. Hydrocarbon detectors have been provided at strategic locations.

S N	EC Conditions	Compliance Status
5.	The company shall also ensure that the total SO₂ emissions from the Panipat Refinery after expansion shall not exceed i.e. 1000 kg/hr. The company shall install an additional Sulphur Recovery Unit (225 MT/day capacity) with 99.9% efficiency and the entire gas generated should be amine treated to reduce the SO₂ emissions level from the Refinery.	The total SO₂ emission of Panipat Refinery is within the limit i.e. 1000 kg/hr as mentioned. Panipat Refinery has installed an additional Sulphur Recovery Unit (225 MT/day capacity) with 99.9% efficiency and the entire gas generated is being amine treated to reduce the SO₂ emissions level from the Refinery.
6.	As per the commitment given, there should be zero effluent discharge due to the proposed expansion. The company should ensure that there will be no discharge of treated effluent into Thirana Drain and the treated effluent from the refinery is not discharged along with the treated effluent from PX-PTA plant. The entire treated waste water should be recycled for reuse in the plant operation and greenbelt development so as to maintain zero discharge. Further, the liquid effluent generated from the Refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under Environment (Protection) Act, 1986 Rules.	There is no discharge of treated effluent from Refinery operations. ETP-1 & ETP-2 treated effluent meets Refinery MINAS. These treated effluents are re-used as a feed to RO plant and makeup to Cooling Towers. PTA-ETP treated effluent meeting Petrochemical MINAS is discharged into Thirana Drain as per Consent-To-Operate /approvals from MOEFCC, HSPCB & Irrigation Department.
7.	The IOCL shall ensure installation of continuous flow measurement devices so that only the permitted quantity of treated effluent from PX-PTA plant (255 m³/hr.) is discharged. Further, IOCL shall make all efforts to recycle and reuse the treated effluent from PX-PTA plant after commencing of the unit.	Flow meters were installed at the time of setting up PTA-ETP. At no point of time discharge of treated effluent is exceeding the prescribed limit of 255 m³/hr. Process Licensor M/s INVISTA has confirmed that "Recycle and Reuse" of PTA treated effluent is not feasible. PX-PTA has permission for discharge of 255m³/hr treated effluent from PTA-ETP to Thirana drain.
8.	Additional water requirement shall not exceed 400 m³/hr. The total quantity of effluent generation should not exceed 1280 m³/hr. as indicated in the Environment Management Plan. The treated effluent should be reused/ recycled to achieve zero discharge.	The total allowable withdrawal of fresh water as per previous EC was 3058.21 m³/hr (as per EC of 5-12 MMTPA expansion). Adding the additional quantity of 400 m³/hr, the overall total allowable water quantity is 3458.21 m³/hr. Presently, fresh water consumption of the Refinery is well below the above mentioned limits. Total quantity of effluent generation remains <1100 m³/hr. ETP-1 & ETP-2 treated effluent meets MINAS. These treated effluents from Refinery operation are completely re-used as a feed to RO plant and as a makeup to Cooling Towers. PTA-ETP treated effluent meeting

S N	EC Conditions	Compliance Status
		Petrochemical MINAS is discharged into Thirana Drain as per approvals/ Consent to Operate from MOEFCC, HSPCB, and Irrigation Department.
9.	Green belt of adequate width and density should be provided to mitigate the effects of fugitive emissions all around the plant. The bio-sludge from the ETP should be used as manure in the green belt development. Company shall develop greenbelt in consultation with DFO as per CPCB guidelines.	Greenbelts with adequate width & density were already provided. These greenbelts were developed in consultation with the District Forest Dept. Bio-sludge from ETP is being used as manure after converting it into semi solid form.
10.	The IOCL shall make efforts to sell petroleum coke (0.9 MMTPA) to organized industries having consent from the concerned State Pollution Control Board. Further, the Pet-coke from the Delayed Coker Unit should be conveyed to storage area by pipe conveyer system. The company should ensure to prevent seepage in Pet-coke stockpile / storage area to prevent soil and ground water pollution.	The Refinery gives Pet-coke to a separate IOCL division called Marketing Division which sells the same to consented/registered industries. Pet-coke is conveyed to storage area by pipe conveyer system.
11.	The oily sludge generated from the refinery operation should be subjected to melting pit treatment for recovery of oil. The recovered oil should be recycled. The residual oily sludge should be disposed off in the HDPE lined pits.	The raw oily sludge generated from the Refinery is subjected to Oil recovery/Melting Pit treatment for recovery of oil. The recovered oil is recycled back with crude oil for processing. - The residual sludge is disposed-off through confined Bio-remediation. - Part of the sludge is processed in Coker unit.
12.	The company should adopt mounded storage for LPG. The project authorities shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP and risk analysis report.	The Mounded Bullets are in operation.
13.	Occupational Health Surveillance of the workers should done on a regular basis and records maintained as per the Factories Act.	The Refinery has a full-fledged Occupational Health Centre (OHC) in operation. The OHC carries out health surveillance of the workers on a regular basis and records are maintained.
General conditions		
1.	The project authorities must strictly adhere to the stipulations made by the Haryana State Pollution Control Board and the State Government.	Complied
2.	No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment & Forests.	Noted.

S N	EC Conditions	Compliance Status												
3.	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Complied. Emission from the stack is being monitored online and from approved lab on bi-monthly basis. All stacks are connected online to CPCB/HSPCB server with parameters such as SO ₂ , NO _x , CO & PM.												
4	The overall noise levels in and around plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).	The Refinery has provided silencers on compressor discharge, acoustic leggings on turbo generators & ejectors and acoustic chambers at the burners. The ambient noise level meets the standards.												
5.	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.	Complied.												
6.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Waste (Management & Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous waste.	Complied.												
7.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Implemented. Year-wise expenditure: (INR in Lakhs) <table><tr><th colspan="2">FY:2024-25</th><th colspan="2">FY:2025-26</th></tr><tr><th>Recurring</th><th>Non-recurring</th><th>Recurring</th><th>Non-recurring</th></tr><tr><td>4456.6</td><td>229.0</td><td>5594.9</td><td>224.0</td></tr></table>	FY:2024-25		FY:2025-26		Recurring	Non-recurring	Recurring	Non-recurring	4456.6	229.0	5594.9	224.0
FY:2024-25		FY:2025-26												
Recurring	Non-recurring	Recurring	Non-recurring											
4456.6	229.0	5594.9	224.0											
8.	The stipulated conditions will be monitored by the Regional of this Ministry at Chandigarh / Central Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.	Six monthly compliance reports on EC conditions are submitted along with various monitoring reports as stated.												

S N	EC Conditions	Compliance Status
9.	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office.	Complied.
10.	The project authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied



ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR BS-VI FUEL QUALITY UP-GRADATION AND EXPANSION OF PX/PTA PLANT AT PANIPAT REFINERY & PETROCHEMICAL COMPLEX (PRPC), PANIPAT (HARYANA) BY M/SINDIAN OIL CORPORATION LIMITED - ENVIRONMENTAL CLEARANCE - REG.

(Ref. No. J-11011/177/2016-IA- II (I) dated 26.03.2018)

Sl. No.	EC Conditions	Compliance Status
(i)	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Consent to Operate for BS-VI facilities including Panipat Refinery & PX-PTA Petrochemical Complex has been received from HSPCB.
(ii)	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	There is no discharge of treated effluent from Refinery operations. ETP-1 & ETP-2 treated effluent meets Refinery MINAS. These treated effluents are re-used as a feed to RO plant and makeup to Cooling Towers. PTA-ETP treated effluent meeting Petrochemical MINAS is discharged into Thirana Drain as per Consent-To-Operate/approvals from MOEFCC, HSPCB & Irrigation Department.
(iii)	In case of PX/PTA expansion project, there shall not be any increase in effluent discharge and the treated effluent of 255 cum/hr shall continue to be discharged to the existing Thirana Drain.	There will be no increase in treated effluent discharge into Thirana Drain post PX-PTA capacity expansion project.
(iv)	Necessary authorization required under the Hazardous and Other Wastes Management Rules, 2016 shall be obtained and the previous contained in the Rules shall be strictly adhered to.	Authorization under Hazardous and Other Wastes Management Rules, 2016 received from HSPCB on 29.09.2023 which is valid upto 30.09.2028.
(v)	Total SO ₂ emissions from the Refinery (including BS-VI Upgradation project) shall not exceed 1100 kg/hr whereas, for the PX/PTA plant after expansion, total SO ₂ emissions shall not exceed 375 kg/hr. Accordingly, total SO ₂ emissions from the Refinery Complex shall be limited to 1475 kg/hr.	SO ₂ emissions from the Refinery (including BS-VI Up gradation project) is within 1100 kg/hr. SO ₂ emissions from after PX-PTA expansion project is well below 375 Kg/hr. Total SO ₂ emission from refinery complex is well below 1475 Kg/hr.
(vi)	National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21 st July, 2010 and amended from time to time shall be followed.	Complied.
(vii)	To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks (attached to DHDT, HGU, Prime G) to meet the prescribed norms and /or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB / SPCB guidelines.	For BS-VI fuel quality up gradation project. Complied. Post commissioning of the PX-PTA capacity expansion project, same shall be ensured.

Sl. No.	EC Conditions	Compliance Status
(viii)	Total fresh water requirement shall not exceed 354 m ³ /hr (8500 KLD) to be met from Munak Regulator. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Complied
(ix)	Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Complied
(x)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Complied
(xi)	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.	Complied. Being mixed fuel (Liquid + Gas) firing in the Boiler, there is no ash generation.
(xii)	The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Complied
(xiii)	Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure to workers to fly ash & dust should be avoided.	Not Applicable
(xiv)	The company shall undertake waste minimization measures as below: (a) Metering and control of quantities of active ingredients to minimize waste. (b) Reuse of by-products from the process as raw material or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapour recovery system. (f) Use of high pressure hoses for equipment cleaning to reduce wastewater generation.	Complied
(xv)	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	Complied
(xvi)	At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.	Complied

Sl. No.	EC Conditions	Compliance Status
(xvii)	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied
(xviii)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Complied
(xix)	Continuous online (24x7) monitoring system for stack emission shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	Stack analyzers are installed and connected to CPCB/HSPCB server. Complied
(xx)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied
General Conditions		
(i)	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board, Central Pollution Control Board, State Government and any other statutory authority.	Complied
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alternations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted
(iii)	The locations of ambient air quality monitoring stations shall be decided in consultation with State Pollution Control Board (SPCB) and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Complied 2 nos. of additional CAAQMS under BS-VI fuel quality up-gradation project is installed in addition to existing 7 nos. of CAAQMS. As present total 11 nos. CAAQMS are available in and around refinery.
(iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826 (E) dated 16 th November, 2009 shall be followed.	Complied

Sl. No.	EC Conditions	Compliance Status												
(v)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Complied Acoustic hoods, silencers and enclosures are provided on all sources of noise generation.												
(vi)	The Company shall harvest rainwater from the roof tops of the building and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	Complied. Rain water harvesting pits are provided to collect rain water from roof tops and storm water drains to recharge the ground water.												
(vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied												
(viii)	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	Complied												
(ix)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. ESC activities shall be undertaken by involving local villages and administration.	Complied												
(x)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Complied												
(xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Implemented Year-wise expenditure: (INR in Lakhs) <table><tr><th colspan="2">FY:2024-25</th><th colspan="2">FY:2025-26</th></tr><tr><th>Recurring</th><th>Non-recurring</th><th>Recurring</th><th>Non-recurring</th></tr><tr><td>4456.6</td><td>229.0</td><td>5594.9</td><td>224.0</td></tr></table>	FY:2024-25		FY:2025-26		Recurring	Non-recurring	Recurring	Non-recurring	4456.6	229.0	5594.9	224.0
FY:2024-25		FY:2025-26												
Recurring	Non-recurring	Recurring	Non-recurring											
4456.6	229.0	5594.9	224.0											
(xii)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.	Complied												

Sl. No.	EC Conditions	Compliance Status
(xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website to the company.	Six monthly EC compliance report is submitted as stated. It is also posted on the website of the company.
(xiv)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Environment statement is submitted to the statutory bodies annually.
(xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	Complied and informed
(xvi)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Complied

Handwritten text, mostly illegible due to fading and bleed-through. The text appears to be organized into several paragraphs, with some lines indented. There are some faint markings on the right margin, possibly a small 'f' and a '5'.

Annexure-8**ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR INSTALLATION OF 100 KLPD LIGNO-CELLULOSIC 2G ETHANOL PLANT AT BAHOLI, BLOCK MADLAUDA, PANIPAT REFINERY ROAD, DISTRICT PANIPAT (HARYANA) BY M/S INDIAN OIL CORPORATION LIMITED - ENVIRONMENTAL CLEARANCE - REG.****(Ref. No. IA-J-11011/43/2018-IA- II (I) dated 13.11.2019)**

SN	EC Conditions	Compliance Status
General Conditions		
1.	The project authorities must strictly adhere to the stipulations made by State Pollution Control Board (SPCB), State Govt. and/or any other statutory authority.	Complied
2.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this ministry for clearance a fresh reference should be made to the ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Approval of MoEF&CC will be obtained for future expansion, if any.
3.	The location of Ambient Air Quality Monitoring Stations shall be decided in consultation with the State Pollution Control Board and it shall be ensured that at least one stations each is installed in upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Complied. 2 nos. ambient air quality monitoring stations have been installed (One at upwind and another one at downwind direction).
4.	The Nation Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R No. 826 (E) dated 16 th November, 2009 shall be complied with.	Complied.
5.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all source of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 and the rules made there under.	Complied.
6.	The company shall harvest rain water from the rooftops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations inside the plant.	Complied, 18 nos. rain water harvesting pits (RWHP) have been installed.
7.	Training shall be imparted to all employees on safety and health aspects of chemical handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied
8.	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management risk mitigation measures and public hearing shall be implemented.	Complied, All the Recommendations given in the EIA report and Public Hearing have been implemented.

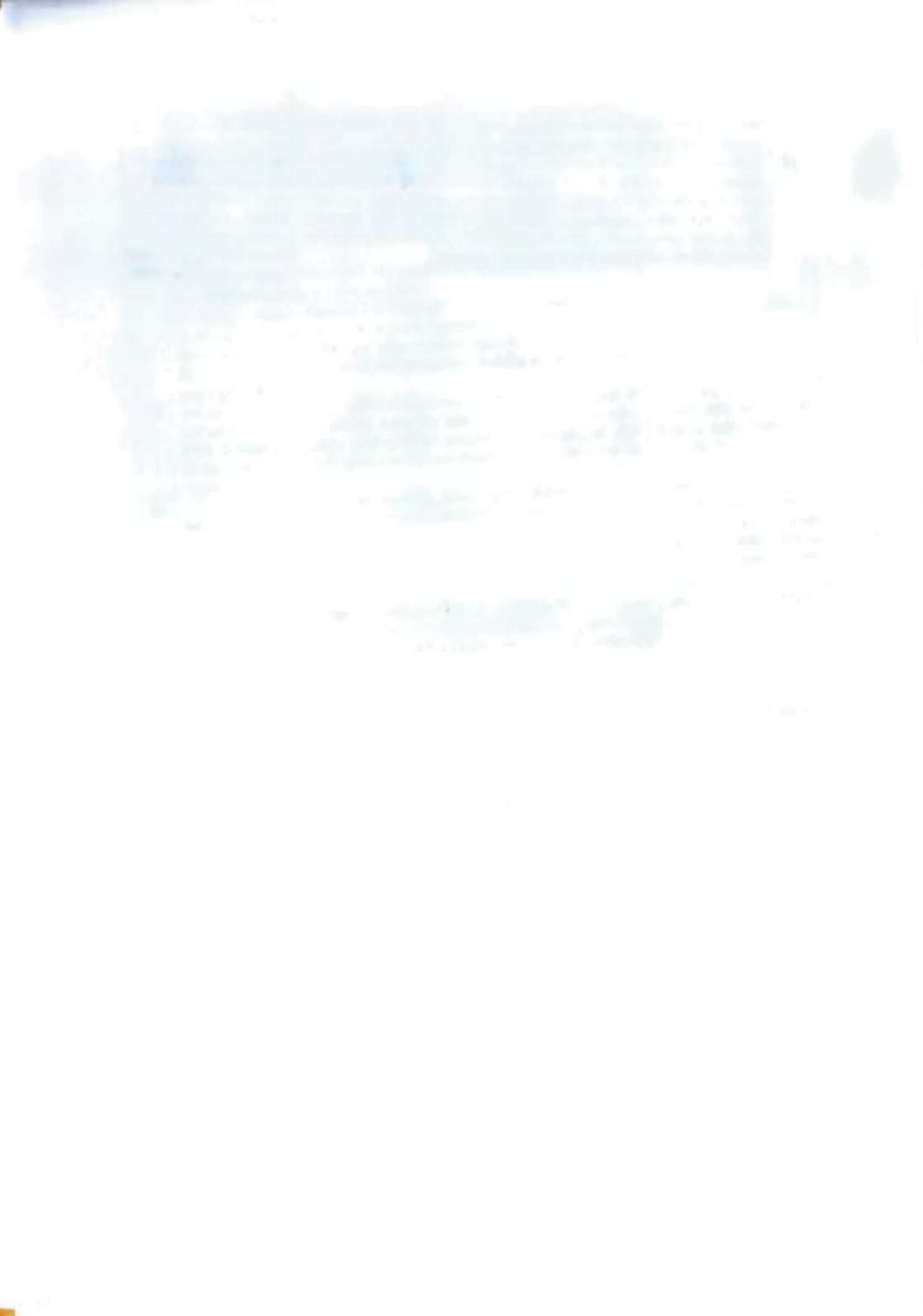
9.	The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental shall be undertaken for overall improvement of the environment.	is being done.				
10.	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Complied. Environmental Management Cell is available with full fledged refinery laboratory to carry out the Environmental Management and Monitoring functions.				
11.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forests and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Complied. Following funds is earmarked for environment management/Pollution control measures: <table><tr><td>Capital cost</td><td>Recurring cost</td></tr><tr><td>3507 lakhs</td><td>187 lakhs</td></tr></table>	Capital cost	Recurring cost	3507 lakhs	187 lakhs
Capital cost	Recurring cost					
3507 lakhs	187 lakhs					
12.	A copy of the clearance letter shall be sent by the project proponent to the concerned Panchayat, Zila Parishad/Municipal corporation, urban local body and local NGO, if any, from whom suggestion/representation, if any, were received while processing the proposal.	Complied				
13.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (Both in hard copy as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Complied				
14.	The environmental statement for each financial year ending 31 st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of Environmental Clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Complied				
15.	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office of the Ministry.	Complied				

Specific Conditions		
1.	The project proponent shall install 10 TPD 2G Ethanol demo plant for R&D purpose.	Complied
2.	Prior approval shall be obtained from the Petroleum & Explosive Safety Organization (PESO) for the site and layout plan submitted to this ministry along with the proposal for EC. In case of any changes therein post PESO approval, the proposal shall require fresh appraisal by the sectoral EAC.	Complied
3.	Necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 as applicable from time to time shall be obtained from the State Pollution Control Board as required.	Complied, CTO received on 21.07.2022
4.	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste / treated water shall be discharged outside the premises.	Complied, ZLD is ensured and no treated water is discharged outside the premises.
5.	Sludge management plan shall be formulated and ensured.	Complied, Sludge management plan is formulated and being ensured.
6.	Ash management shall be ensured by utilizing for manufacturing bricks.	Complied, An agency is in place for utilization of Ash.
7.	Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement Rules ,2016 Solid Waste Management Rules ,2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.	Hazardous waste Authorization obtained from HSPCB.
8.	To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Complied, Stack is provided as per CPCB/SPCB guidelines.
9.	Total fresh water requirement shall not exceed 109 m ³ /hr., proposed to be met from Munak Regulator on Western Yamuna Canal. Prior permission shall be obtained from the concerned regulatory authority.	Complied, Permission for withdrawal of fresh water from irrigation and water resources department, Haryana is taken and it is valid upto 31.03.2028.
10.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arrester shall be provided on tank farm and the solvent transfer through pumps.	Complied.
11.	Process organic residue and spent carbon, if any shall be sent to cement industries. ETP sludge, process inorganic and evaporation salt shall be disposed off to the TSDF.	Complied.

12.	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as mentioned time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicles Act, 1989.	Complied.
13.	The company shall undertake waste minimization measures as below:- (a) Metering and control of quantities of active ingredients to minimize waste. (b) Reuse of by-products from the process as raw materials or as raw materials substitutes in other processes. (c) Use of automatic filling to avoid spillage. (d) Use of Close Feed System into batch reactors. (e) Venting equipment through vapor recovery system. (f) Use of high pressure hoses for equipment clearing to reduce waste water generation.	Complied
14.	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be done as per the CPCB guidelines in consultation with the State Forest Department.	Complied, Green belt more than 33% of total plant area is available.
15.	All the commitments made regarding issues raised during the public hearing / consultation meeting shall be satisfactorily implemented.	Complied. All the commitments made regarding issues raised during Public Hearing have been implemented.
16.	At least 1% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.	Under implementation.
17.	For the DG sets, emission limits and stack height shall be in conformity with the extant regulations and the CPCB regulations. Acoustic enclosures shall be provided to the DG set for controlling the noise pollution.	No DG sets are installed in this project.
18.	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Complied, Necessary firefighting equipments are provided as per recommendations made in the RRA report.
19.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied
20.	There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	Complied

21.	Storage of raw material shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.	Complied
22.	Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel /drain carrying effluent within the premises.	Stack is provided as per CPCB/SPCB guidelines. Stack emission data has been connected to new CEMS portal of CPCB. Installation of web camera and flow meter is completed.

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ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR SETTING UP 128 KL PER DAY ETHANOL PRODUCTION PLANT BY M/S INDIAN OIL CORPORATION LTD. (IOCL) IN PANIPAT REFINERY & PETROCHEMICAL COMPLEX AT PANIPAT, HARYANA - ENVIRONMENTAL CLEARANCE – REGARDING
(Ref. No. J-11011/78/2018-IA- II (I) dated 25.11.2019)

SN	EC Conditions	Compliance Status
General Conditions		
1.	The project authorities must strictly adhere to the stipulations made by State Pollution Control Board (SPCB), State Govt. and/or any other statutory authority.	Complied
2.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this ministry for clearance a fresh reference should be made to the ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Approval of MoEF&CC will be obtained for future expansion, if any.
3.	The location of Ambient Air Quality Monitoring Stations shall be decided in consultation with the State Pollution Control Board and it shall be ensured that at least one stations each is installed in upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Complied. 2 nos. Air Quality Monitoring Stations have been installed.
4.	The Nation Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R No. 826 (E) dated 16 th November, 2009 shall be complied with.	Complied
5.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all source of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 and the rules made there under.	Complied.
6.	The company shall harvest rain water from the rooftops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations inside the plant.	Complied, Rain water harvesting pits are installed.
7.	Training shall be imparted to all employees on safety and health aspects of chemical handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied
8.	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management risk mitigation measures and public hearing shall be implemented.	Complied, All the Recommendations given in the EIA report and Public Hearing have been implemented.
9.	The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental shall be undertaken for overall improvement of the environment.	Under implementation.
10.	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Environmental Management Cell is available with full-fledged refinery laboratory to carry out the Environmental Management and Monitoring functions.

11.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forests and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Complied
12.	A copy of the clearance letter shall be sent by the project proponent to the concerned Panchayat, Zila Parishad/Municipal corporation, urban local body and local NGO, if any, from whom suggestion/representation, if any, were received while processing the proposal.	Complied
13.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (Both in hard copy as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Complied
14.	The environmental statement for each financial year ending 31 st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of Environmental Clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Complied.
15.	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office of the Ministry.	Complied
Specific Conditions		
1.	Necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 as applicable from time to time shall be obtained from the State Pollution Control Board as required.	Complied, CTO is received on 27.07.2022
2.	Effluent of 209 cum per day shall be treated in existing Effluent Treatment Plant of Panipat Refinery and Panipat Refinery will not exceed the permissible discharge as allowed to Panipat Refinery while granting environmental clearance vide letter dated 26 th March 2018.	Complied
3.	Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement Rules, 2016 Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.	Complied
4.	To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Complied, Adequate measures have been taken to control fugitive emissions. No furnace/boiler is installed in this project.

5.	Odour shall be prevented at the source and effective odour management scheme shall be implemented.	Complied, Monitoring of odour is done regularly and its control measures are implemented.
6.	Total fresh water requirement shall not exceed 3600 cum/day, proposed to be met from Munak Regulator on Western Yamuna Canal. Prior permission shall be obtained from the concerned regulatory authority.	Complied, Permission for withdrawal of fresh water from Irrigation and water resources department, Haryana is taken and it is valid upto 31.03.2028.
7.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arrester shall be provided on tank farm and the solvent transfer through pumps.	Complied,
8.	Process organic residue and spent carbon, if any shall be sent to cement industries. ETP sludge, process inorganic and evaporation salt shall be disposed off to the TSDF.	Complied
9.	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as mentioned time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicles Act, 1989.	Complied
10.	The company shall undertake waste minimization measures as below:- (a) Metering and control of quantities of active ingredients to minimize waste. (b) Reuse of by-products from the process as raw materials or as raw materials substitutes in other processes. (c) Use of automatic filling to avoid spillage. (d) Use of Close Feed System into batch reactors. (e) Venting equipment through vapor recovery system (f) Use of high pressure hoses for equipment clearing to reduce waste water generation.	Complied
11.	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be done as per the CPCB guidelines in consultation with the State Forest Department.	Complied, Green belt more than 33% of total plant area is available.
12.	All the commitments made regarding issues raised during the public hearing / consultation meeting shall be satisfactorily implemented.	Complied
13.	At least 1% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Priority shall be given for construction/repair of the village roads.	Under implementation.

14.	For the DG sets, emission limits and stack height shall be in conformity with the extant regulations and the CPCB regulations. Acoustic enclosures shall be provided to the DG set for controlling the noise pollution.	No DG sets are installed in this project.
15.	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Complied, Necessary firefighting equipments are provided as per recommendations made in the RRA report.
16.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied
17.	There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	Complied
18.	Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel /drain carrying effluent within the premises.	No furnace/boiler is installed in this project.
19.	The unit shall comply with NGT order and shall not damage environment any further including ground water.	Complied
20.	The unit shall take precautionary measures for control of VOCs and shall follow CPCB guideline and norms.	Complied

ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR PANIPAT REFINERY CAPACITY EXPANSION FROM EXISTING 15 MMTPA TO 25 MMTPA WITHIN THE EXISTING REFINERY COMPLEX, ENVIRONMENTAL CLEARANCE – REGARDING (EC Identification No. EC21A010HR142882; File No. J-11011/177/2016-IAII(I) dated 03.12.2021)

SN	EC Conditions	Compliance Status
Specific Conditions		
(i).	The project shall conform to ZLD.	Noted and shall be complied
(ii).	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	Will be complied
(iii).	The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R.595(E) dated 21st August, 2009 as amended from time to time, shall be followed.	Noted
(iv).	Volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.997% with effective chillers/modern technology. For emission control and management, use of FG/NG in heater as fuel, adequate stack height, use of Low NOX burners in heater & boiler, continuous stack monitoring, Sulphur recovery plant, etc. shall be installed/ensured.	Will be complied
(v).	Total water requirement is 1,62,864 m3/day of which fresh water requirement of 98880 m3/day will be met from Western Yamuna Canal. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Will be complied
(vi).	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Will be complied
(vii).	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Will be complied
(viii).	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	Will be complied
(ix).	Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust should be avoided. The ash from boiler shall be sold to brick manufacturers/cement industry.	Mixed fuel (Liquid +Gas) will be fired in the Boiler; there will be no ash generation.

(x).	The company shall undertake waste minimization measures as below: - a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapour recovery system. f. Use of high pressure hoses for equipment cleaning to reduce wastewater generation.	Will be complied
(xi).	The green belt of 5-10 m width shall be developed in the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. The project proponent shall ensure 33% greenbelt area vis-à-vis the project area through afforestation in the degraded area. The Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	Complied. More than 33% Green belt area vis-à-vis the project area is available.
(xii).	As per the Ministry's OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility, and as per the action plan proposed by the project proponent to address the socioeconomic and environmental issues in the study area, the project proponent, as committed, shall provide education funds in technical training centers/ support in nearby village's schools, support in health care facilities, drinking water supply and funds for miscellaneous activities like solar street lights, battery, solar panel etc., in the nearby villages. The action plan shall to be completed within time as proposed.	Will be complied
(xiii).	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied
(xiv).	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	Will be complied
(xv).	Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	Will be complied
(xvi).	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Will be complied
(xvii).	Process safety and risk assessment studies shall be further carried out using advanced models, and the mitigating measures shall be undertaken/implemented accordingly.	Will be complied
(xviii).	The PP should improve the efficiency of ETP Plant and the water discharge should be as per prescribed CPCB Norms. They should also install 24x7 hours monitoring system (of the discharge) and the same should be connected to the server of SPCB/CPCB.	Noted and will be complied.

General Conditions

(i)	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted
(ii)	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	Will be complied
(iii)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Will be complied
(iv)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Will be complied
(v)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Will be complied
(vi)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.	No representations received/suggestions received from these mentioned authorities while processing the proposal.
(vii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by email) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.	This is complied for existing refinery and will continue to do so in future.
(viii)	The environmental statement for each financial year ending 31st March in Form V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	This is complied for existing refinery and will continue to do so in future.

(ix).	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry and at https://parivesh.nic.in/ . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	Complied and informed.
(x).	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Will be complied
(xi).	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Noted



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Test Report

 Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

 ULR No.: TC14814280000478F, 508F, 515F
Test Report Date: 06/02/2026

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Project Building

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

24 Hrs.

Date of Sampling	Parameter											
	Particulate Matter (PM2.5) $\mu\text{g}/\text{m}^3$	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	Sulphur Dioxide (as SO2) $\mu\text{g}/\text{m}^3$	Nitrogen Dioxide (as NO2) $\mu\text{g}/\text{m}^3$	Ozone (as O3) $\mu\text{g}/\text{m}^3$	Lead (as Pb) $\mu\text{g}/\text{m}^3$	Carbon Monoxide (as CO) mg/m^3	Ammonia (as NH3) mg/m^3	Nickel (as Ni) mg/m^3	Arsenic (as As) mg/m^3	Benzo (a) pyrene (as BAP) mg/m^3	Benzo (a) (C9-H7) mg/m^3
22-01-2026	32.10	74.60	10.60	23.20	18.10	BDL	0.98	32.90	BDL	BDL	BDL	BDL
27-01-2026	44.50	78.60	22.40	26.70	22.50	BDL	1.05	40.80	BDL	BDL	BDL	BDL
29-01-2026	30.90	73.80	18.40	21.90	20.10	BDL	0.85	36.30	BDL	BDL	BDL	BDL
Minimum	32.10	72.80	18.60	21.90	18.10	-	0.85	32.90	-	-	-	-
Maximum	44.50	78.60	22.40	26.70	22.50	-	1.05	40.80	-	-	-	-
Average	36.83	75.33	17.13	23.83	20.23	-	0.95	36.67	-	-	-	-
NAAQM Standards	60	100	80	80	100	1	2	400	20	5	1	5
Test Method	40CFR Appendix L Part 82 CPCS Guideline	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-9)	MLISOP (IAAQ-11)	IS:5182 (P-10)	Method of Air Sampling & Analysis	MLISO (IAAQ-13)	MLISOP (IAAQ-13)	IS:5182 (P-12)	IS:5182 (P-13)

Remarks:

NAAQM: National Ambient Air Quality Standards; Schedule VI, (Part 3 (35)) (Part-14ec-12) 26.11.2009

BDL: Below Detection Limit, *Arsenic-BDL (LOD-0.6), *Pb-BDL (LOD-0.02), *Benzo(a)P-BDL (LOD-0.6), *Lead-BDL (LOD-0.5), *Nickel-BDL (LOD-0.1)

Sample Analyzed within Seven days from the date of sampling.



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Test Report

Issued To **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No.: TC14814280000522F, 585F, 543F, 575F, 709F, 759F, 798F
Test Report Date: 02/03/2026

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Project Building

To Check the Pollution Load

IS 5182 (Part 14)

Nitya Laboratories

24 Hrs.

Date of Sampling	Parameter											
	Particulate Matter (PM _{2.5}) µg/m ³	Particulate Matter (PM ₁₀) µg/m ³	Sulphur Dioxide (as SO ₂) µg/m ³	Nitrogen Dioxide (as NO ₂) µg/m ³	Ozone (as O ₃) µg/m ³	Lead (as Pb) µg/m ³	Carbon Monoxide (as CO) mg/m ³	Ammonia (as NH ₃) µg/m ³	Nickel (as Ni) ng/m ³	Arsenic (as As) ng/m ³	Benzo (a) pyrene (as BAP) ng/m ³	Benzenes (C ₆ H ₆) µg/m ³
02-02-2026	35.50	71.80	22.30	25.50	16.20	BDL	1.03	30.40	BDL	BDL	BDL	BDL
05-02-2026	47.80	75.50	24.40	28.40	34.50	BDL	1.12	37.20	BDL	BDL	BDL	BDL
09-02-2026	38.20	74.40	20.30	23.30	31.70	BDL	1.06	34.50	BDL	BDL	BDL	BDL
12-02-2026	32.40	76.60	21.50	27.70	22.40	BDL	1.11	21.70	BDL	BDL	BDL	BDL
16-02-2026	33.60	78.50	22.40	28.40	18.50	BDL	1.17	28.50	BDL	BDL	BDL	BDL
19-02-2026	36.50	72.20	23.40	29.50	17.20	BDL	1.09	27.70	BDL	BDL	BDL	BDL
23-02-2026	31.40	71.50	24.50	28.30	21.80	BDL	1.15	26.50	BDL	BDL	BDL	BDL
Minimum	30.80	71.50	20.30	23.30	16.20	-	1.03	26.50	-	-	-	-
Maximum	47.80	78.50	24.50	29.50	34.50	-	1.17	37.20	-	-	-	-
Average	35.39	74.36	22.69	27.30	20.33	-	1.10	30.93	-	-	-	-
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline 9	IS-5182 (P-21)	IS-5182 (P-2)	IS-5182 (P-4)	IS-5182 (P-9)	NL/SOP /AAQ-11	IS-5182 (P-10)	Method of Air Sampling & Analysis	NL/SOP /AAQ-12	NL/SOP /AAQ-12	IS-5182 (P-12)	IS-5182 (P-11)

Remarks:

*NAAQS: National Ambient Air Quality Standards, Schedule IV, (Part-3) (Rule 3) (2009) (Part-1) (16-11-2009)

BDL: Below Detection Limit, *Benzene-BDL (LOQ-0.5), *BAP-BDL (LOQ-0.5), *Benzo(a)Pyrene-BDL (LOQ-0.5), *Lead-BDL (LOQ-0.5), *Nickel-BDL (LOQ-1.0)

Sample Analyzed within seven days from the date of sampling.



TC-14814



(RAYINDER MITTAL)

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No.: TC148142600000918F, 962F, 972F, 1006F, 1072F, 1102F, 1120F
1154F, 1279F
Test Report Date: 08/04/2026

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

- ☐ Ambient Air Quality Monitoring
- ☐ Project Building
- ☐ To Check the Pollution Load
- ☐ IS 5182 (Part 14)
- ☐ Nitya Laboratories
- ☐ 24 Hrs.

Date of Sampling	Parameter											
	Particulate Matter (PM2.5) µg/m ³	Particulate Matter (PM10) µg/m ³	Sulphur Dioxide (as SO ₂) µg/m ³	Nitrogen Dioxide (as NO ₂) µg/m ³	Ozone (as O ₃) µg/m ³	Lead (as Pb) µg/m ³	Carbon Monoxide (as CO) mg/m ³	Ammonia (as NH ₃) µg/m ³	Nickel (as Ni) µg/m ³	Arsenic (as As) µg/m ³	Benzo (a) pyrene (as BAP) µg/m ³	Benzo (a) pyrene (as BAP) µg/m ³
02-03-2026	53.20	69.20	30.50	27.70	14.80	BDL	1.01	25.20	BDL	BDL	BDL	BDL
05-03-2026	45.30	73.40	22.40	30.40	22.30	BDL	1.10	35.50	BDL	BDL	BDL	BDL
08-03-2026	34.80	72.10	16.90	21.80	19.30	BDL	1.03	32.30	BDL	BDL	BDL	BDL
17-03-2026	38.40	74.40	23.20	25.20	20.40	BDL	1.15	29.40	BDL	BDL	BDL	BDL
18-03-2026	31.20	76.50	24.50	26.30	18.30	BDL	1.23	35.30	BDL	BDL	BDL	BDL
19-03-2026	28.40	70.40	25.70	27.40	15.40	BDL	1.18	25.50	BDL	BDL	BDL	BDL
20-03-2026	29.20	73.20	26.20	26.10	20.30	BDL	1.24	24.80	BDL	BDL	BDL	BDL
25-03-2026	28.20	72.10	25.60	26.00	19.40	BDL	1.03	23.80	BDL	BDL	BDL	BDL
30-03-2026	29.50	73.40	24.80	25.60	19.60	BDL	1.17	24.10	BDL	BDL	BDL	BDL
Minimum	28.20	69.20	16.90	21.80	14.80	-	1.01	23.60	-	-	-	-
Maximum	45.30	76.50	26.20	30.40	22.30	-	1.24	35.50	-	-	-	-
Average	32.22	72.74	23.63	26.24	18.64	-	1.13	27.72	-	-	-	-
NAADM Standards	60	100	80	80	150	1	2	400	20	5	1	5
Test Method	40CPR Appendix I Part-93 CPCB Guideline 8	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-4)	IS:5182 (P-8)	NL/SOP (AAQ-11)	IS:5182 (P-10)	Method of Air Sampling & Analysis	NL/SOP (AAQ-12)	NL/SOP (AAQ-12)	IS:5182 (P-12)	IS:5182 (P-11)

Remarks: NAADM: National Ambient Air Quality Standards, Schedule IV, (Rule 3 (2B)) (Part-93)
BDL: Below Detection Limit, *Arsenic-BDL (LOQ: 0.5), *BAP-BDL (LOQ: 0.5), *Benzo (a) pyrene-BDL (LOQ: 0.5), *Nickel-BDL (LOQ: 1.0)
Sample Analyzed within seven days from the date of sampling.



TC-14814



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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No: TC148/142600001664F, 1617F, 1991F, 2037F, 2068F, 2107F, 2126F
2154F
Test Report Date: 05/06/2026

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (hrs.)

- Ambient Air Quality Monitoring
- Project Building
- To Check the Pollution Load
- IS:5182 (Part 14)
- Nitya Laboratories
- 24 hrs.

Date of Sampling	Parameter											
	Particulate Matter (PM2.5) $\mu\text{g}/\text{m}^3$	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	Sulphur Dioxide (as SO2) $\mu\text{g}/\text{m}^3$	Nitrogen Dioxide (as NO2) $\mu\text{g}/\text{m}^3$	Ozone (as O3) $\mu\text{g}/\text{m}^3$	Lead (as Pb) $\mu\text{g}/\text{m}^3$	Carbon Monoxide (as CO) mg/m^3	Ammonia (as NH3) $\mu\text{g}/\text{m}^3$	Nickel (as Ni) ng/m^3	Arsenic (as As) ng/m^3	Benzo (a) pyrene (as BAP) ng/m^3	Benzene (C6H6) $\mu\text{g}/\text{m}^3$
04-05-2026	32.40	69.40	19.40	24.10	14.50	BDL	1.12	26.40	BDL	BDL	BDL	BDL
07-05-2026	44.60	70.70	21.70	27.80	21.90	BDL	1.20	34.80	BDL	BDL	BDL	BDL
11-05-2026	33.60	58.90	17.60	18.70	18.60	BDL	1.04	31.90	BDL	BDL	BDL	BDL
15-05-2026	30.30	71.60	22.90	24.60	19.40	BDL	1.17	28.90	BDL	BDL	BDL	BDL
18-05-2026	31.40	73.80	24.60	23.30	16.70	BDL	1.26	29.60	BDL	BDL	BDL	BDL
22-05-2026	28.60	58.20	22.40	24.40	18.20	BDL	1.12	28.70	BDL	BDL	BDL	BDL
25-05-2026	28.30	70.30	23.20	22.60	20.30	BDL	1.24	22.30	BDL	BDL	BDL	BDL
26-05-2026	27.80	69.10	21.30	23.70	17.40	BDL	1.05	21.50	BDL	BDL	BDL	BDL
Minimum	25.50	58.20	17.60	18.70	14.50	-	1.04	21.50	-	-	-	-
Maximum	44.60	73.80	24.60	27.80	21.90	-	1.26	34.80	-	-	-	-
Average	31.72	70.21	21.56	23.68	18.00	-	1.15	26.71	-	-	-	-
NAAQM Standards	60	100	60	60	100	1	2	400	20	5	1	5
Test Method	40 CFR Appendix L Part 63 CPOB Guideline	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-4)	IS:5182 (P-6)	ML SOP (AAQ-11)	IS:5182 (P-15)	Method of Air Sampling & Analysis	ML/SO P/AAQ-12	ML/SOP/AAQ-13	IS:5182 (P-12)	IS:5182 (P-11)

Remark:

*NAAQM: National Ambient Air Quality Standards, Schedule-VI, Part-1 (2009) (Part-1 (2009) 16-11-2009)
BDL-Below Detection Limit, *Arsenic-BDL (0.00-0.05), *BAP-BDL (0.00-0.05), *Benzene-BDL (0.00-0.05), *Lead-BDL (0.00-0.05), *Nickel-BDL (0.00-1.0)
Sample Analyzed within Seven days from the date of sampling.



TC-148/14

(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

U/R No.: TC14814260002190F, 2221F, 2248F, 2270F, 2342F, 2353F, 2388F
2411F
Test Report Date: 04/07/2026

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

- Ambient Air Quality Monitoring
- Project Building
- To Check the Pollution Load
- IS 5182 (Part 14)
- Nitya Laboratories
- 24 Hrs.

Date of Sampling	Parameter											
	Particulate Matter (PM _{2.5}) µg/m ³	Particulate Matter (PM ₁₀) µg/m ³	Sulphur Dioxide (as SO ₂) µg/m ³	Nitrogen Dioxide (as NO ₂) µg/m ³	Ozone (as O ₃) µg/m ³	Lead (as Pb) µg/m ³	Carbon Monoxide (as CO) mg/m ³	Ammonia (as NH ₃) µg/m ³	Nickel (as Ni) ng/m ³	Arsenic (as As) ng/m ³	Benzo (a) pyrene (as BAP) ng/m ³	Benzene (C ₆ H ₆) µg/m ³
01-06-2026	30.50	67.10	17.40	22.50	12.40	BDL	1.09	23.50	BDL	BDL	BDL	BDL
04-06-2026	42.70	65.50	19.20	25.80	19.20	BDL	1.18	32.10	BDL	BDL	BDL	BDL
08-06-2026	31.10	66.20	15.30	16.10	16.60	BDL	1.02	29.20	BDL	BDL	BDL	BDL
11-06-2026	28.50	69.90	20.80	22.30	17.80	BDL	1.15	25.50	BDL	BDL	BDL	BDL
15-06-2026	29.80	71.30	22.80	21.60	14.30	BDL	1.20	23.90	BDL	BDL	BDL	BDL
18-06-2026	23.50	66.70	20.40	22.90	13.20	BDL	1.11	21.60	BDL	BDL	BDL	BDL
22-06-2026	26.30	58.40	21.10	20.80	18.70	BDL	1.22	20.30	BDL	BDL	BDL	BDL
25-06-2026	35.20	67.20	19.80	21.50	15.40	BDL	1.04	19.70	BDL	BDL	BDL	BDL
Minimum	23.50	66.20	15.30	16.10	12.40	-	1.02	19.70	-	-	-	-
Maximum	42.70	71.30	22.80	25.80	19.20	-	1.22	32.10	-	-	-	-
Average	29.73	68.16	19.55	21.69	15.95	-	1.13	24.60	-	-	-	-
NAAQM Standards	80	100	80	80	100	1	2	400	20	5	1	5
Test Method	40CPR Appendix L Part 53 CPCB Guidelines	IS:5182 (P-22)	IS:5182 (P-2)	IS:5182 (P-4)	IS:5182 (P-5)	NL/50P (AAQ-11)	IS:5182 (P-10)	Method of Air Sampling & Analysis	NL/50P (AAQ-13)	NL/50P (AAQ-12)	IS:5182 (P-12)	IS:5182 (P-11)

Remarks:

*NAAQM: National Ambient Air Quality Standards, Schedule VI, (Part-2 (B)), (Part-1 (Annex-3)) 16-11-2009

BDL: Below Detection Limit, *Arsenic-BDL (5.00-0.5), *BAP-BDL (5.00-0.5), *Benzene-BDL (5.00-0.5), *Lead-BDL (5.00-0.5), *Nickel-BDL (5.00-1.0)

Sample Analyzed within Seven days from the date of sampling.



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Refinery, Haryana, INDIA	ULR No	TC14814260000623F-024F
Sample Description	Flue Gas Monitoring	Test Report Date	26/02/2026
Date of Sample Received	30-01-2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	30/01/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-26	30-01-2026	70	1.8	26	226	11.14
2	SRU-27	30-01-2026	70	1.9	26	216	11.88

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	SRU-26	30-01-2026	98.6	7.5	37.8	65.5	5.31	36.94	8.50	0.66	7.42
2	SRU-27	30-01-2026	102.5	8.1	39.1	54.6	4.30	28.97	11.60	0.92	10.13
Permissible Limits (mg/Nm ³)			-			160			160		
Test Method			IS:11256 (P-2)			IS:11255 (P-7)			IS:13270		



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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Haryana, INDIA	SLR No	TC14814260000523F-524F
Sample Description	Flue Gas Monitoring	Test Report Date	06/02/2026
Date of Sample Received	30/01/2026	Method of Sampling	IS-11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	30/01/2026
		Test Completed On	05/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	SRU-26	30-01-2026	75	1.9	26	226	11.14
35	SRU-57	30-01-2026	75	1.9	26	216	11.09

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	Kg/hr	ppm
34	SRU-26	30-01-2026	ND	-	-
35	SRU-57	30-01-2026	ND	-	-
Permissible Limits (mg/Nm ³)					
Test Method			IS:11255 (P-4)		



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Test Report

Issued To : M/s Indian Oil Corporation Limited (Refinery Division)
Sample Description : Flue Gas Monitoring
Date of Sample Received : 23/02/2026
Sampling Conducted By : Rishi Pal

ULR No : TC148142930000838F-565F
Test Report Date : 03/03/2026
Method of Sampling : IS: 11255 (Part 7)
Test Started On : 23/02/2026
Test Completed On : 28/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRS-G-1	03-02-2026	70	3.3	27	161	8.95
2	HRS-G-2	03-02-2026	70	3.3	27	148	8.71
3	HRS-G-4	03-02-2026	70	3.3	27	167	11.97
4	HRS-G-5	03-02-2026	70	3.3	27	168	9.88
5	UB-01	04-02-2026	100	3.90	28	155	10.12
6	UB-02	04-02-2026	100	3.90	28	168	10.55
7	CPP-VHR-1	04-02-2026	100	3.34	28	156	8.95
8	AVU-1	05-02-2026	100	5.1	28	148	9.80
9	CCRU Reformer Heater-201, 202, 203 FF	05-02-2026	60	1.84	28	266	12.75
10	CCRU NHT Heater-FF 101	05-02-2026	70	2.34	28	282	11.58
11	CCRU Reformer Heater-FF 205	05-02-2026	70	2.34	28	240	11.02

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/m ³	Kg/hr	mg/m ³	Kg/hr	PPM	mg/m ³	Kg/hr	PPM
1	HRS-G-1	03-02-2026	7.2	1.4	0.2	1.2	2.4	187.2	36.26	10.50
2	HRS-G-2	03-02-2026	8.1	1.6	7.1	1.3	2.7	213.4	46.42	113.43
3	HRS-G-4	03-02-2026	7.6	1.9	6.8	1.7	2.6	206.7	52.58	109.35
4	HRS-G-5	03-02-2026	8.4	1.7	6.2	1.3	2.4	195.2	40.08	103.76
5	UB-01	04-02-2026	7.4	14.8	8.1	16.6	3.1	194.2	265.31	71.33
6	UB-02	04-02-2026	7.6	15.2	7.8	15.6	3.0	129.6	258.15	66.86
7	CPP-VHR-1	04-02-2026	8.9	1.9	8.9	1.9	3.4	185.4	34.79	87.91
8	AVU-1	05-02-2026	8.2	6.1	9.1	4.6	3.5	123.3	61.47	66.48
9	CCRU Reformer Heater-201, 202, 203 FF	05-02-2026	7.6	0.4	7.6	0.4	2.9	120.3	6.22	62.94
10	CCRU NHT Heater-FF 101	05-02-2026	8.2	3.8	8.2	0.8	3.1	165.2	55.91	87.81
11	CCRU Reformer Heater-FF 205	05-02-2026	7.8	0.8	8.9	0.9	3.4	143.2	14.20	76.11
Permissible Limits (mg/M ³)			Gas		90			350		
			Liquid		1700			480		
Test Method			IS:11255 (P-1)		IS:11255 (P-2)			IS:11255 (P-3)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Naphtha Cracker, Haryana, INDIA	ULR No	TG14814260000538F-565F
Sample Description	Flue Gas Monitoring	Test Report Date	03/03/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	03-02-2026	70	3.3	27	151	8.95
2	HRSG-2	03-02-2026	70	3.3	27	149	8.71
3	HRSG-4	03-02-2026	70	3.3	27	157	11.97
4	HRSG-5	03-02-2026	70	3.3	27	169	9.88
5	UB-01	04-02-2026	100	6.96	28	166	10.12
6	UB-02	04-02-2026	100	6.96	28	168	10.65
7	CPP-VHR-1	04-02-2026	100	3.34	28	166	9.58
8	AVU-1	05-02-2026	100	6.1	28	145	9.88
9	CCRU Reformer Heater-201, 202,203 FF	05-02-2026	80	1.64	28	286	12.75
10	CCRU NHT Heater-FF 101	05-02-2026	70	2.34	28	382	11.58
11	CCRU Reformer Heater-FF 205	05-02-2026	70	2.34	28	240	11.02

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM
1	HRSG-1	03-02-2026	4.4	0.85	3.84
2	HRSG-2	03-02-2026	2.3	0.44	2.91
3	HRSG-4	03-02-2026	3.2	0.82	2.79
4	HRSG-5	03-02-2026	5.2	1.87	4.94
5	UB-01	04-02-2026	5.9	11.66	5.15
6	UB-02	04-02-2026	6.4	12.89	5.59
7	CPP-VHR-1	04-02-2026	7.6	1.60	6.63
8	AVU-1	05-02-2026	10.3	5.14	8.98
9	CCRU Reformer Heater-201, 202,203 FF	05-02-2026	14.5	0.74	12.48
10	CCRU NHT Heater-FF 101	05-02-2026	18.2	1.75	15.89
11	CCRU Reformer Heater-FF 205	05-02-2026	19.4	1.92	16.93
Permissible Limits (mg/Nm ³)		Gas	158		
		Liquid	200		
Test Method		IS:11270			



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Peripet Naphta Checker, Haryana, INDIA	Test Report No	202602030110-120
Sample Description	Flue Gas Monitoring	Test Report Date	03/03/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS-11284 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	03-02-2026	70	3.3	27	181	8.84
2	HRSG-2	03-02-2026	70	3.3	27	149	8.71
3	HRSG-4	03-02-2026	78	3.3	27	157	11.97
4	HRSG-5	03-02-2026	79	3.3	27	188	9.60
5	UB-01	04-02-2026	100	9.86	28	155	10.13
6	UB-02	04-02-2026	100	9.86	28	168	10.33
7	CPP/VNP-1	04-02-2026	100	3.34	28	190	9.80
8	AVG-1	05-02-2026	100	5.1	28	149	9.60
9	CCRU Reformer Heater-201, 202, 203 FF	06-02-2026	60	1.84	28	286	12.75
10	CCRU NHT Heater-FF 101	06-02-2026	75	2.34	28	252	11.36
11	CCRU Reformer Heater-FF 206	06-02-2026	75	2.34	28	240	11.02

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V) ¹		
			mg/Nm ³	Kg/hr	PPM
1	HRSG-1	03-02-2026	ND	-	-
2	HRSG-2	03-02-2026	ND	-	-
3	HRSG-4	03-02-2026	ND	-	-
4	HRSG-5	03-02-2026	ND	-	-
5	UB-01	04-02-2026	ND	-	-
6	UB-02	04-02-2026	ND	-	-
7	CPP/VNP-1	04-02-2026	ND	-	-
8	AVU-1	05-02-2026	ND	-	-
9	CCRU Reformer Heater-201, 202,203 FF	06-02-2026	ND	-	-
10	CCRU NHT Heater-FF 101	06-02-2026	ND	-	-
11	CCRU Reformer Heater-FF 206	06-02-2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	5		
Test Method		IS-11270			



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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No

TC14814260000009F-002F

Sample Description

(Refinery Division)

Test Report Date

02/02/2026

Date of Sample Received

Paripat Refinery, Haryana, INDIA

Method of Sampling

IS: 11255 (Part 7)

Sampling Conducted By

22/02/2026

Test Started On

23/02/2026

Rishi Pal

Test Completed On

28/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
12	OHCU LP Section	06-02-2026	65	2.42	27	226	11.25
13	OHCU RG Heater	06-02-2026	63	2.42	27	176	9.91
14	RFCC Boiler	06-02-2026	106	6.65	27	167	9.61
15	RFCC Heater	06-02-2026	67	6.25	27	384	11.97
16	DCU Heater	06-02-2026	70	5	26	178	9.29
17	DHDS	09-02-2026	70	1.3	28	226	10.87
18	DHDT H-01	10-02-2026	70	1.8	28	192	10.82
19	DHDT H-02	10-02-2026	70	1.8	28	192	10.51
20	AVU-2	10-02-2026	100	5.1	28	145	8.33
21	HGU T7	11-02-2026	60	1.7	27	156	10.43
22	HGU T6	11-02-2026	60	1.4	27	167	10.39

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
12	OHCU LP Section	06-02-2026	9.4	1.1	4.3	0.5	1.6	132.4	14.61	70.37
13	OHCU RG Heater	06-02-2026	9.1	1.0	3.8	0.4	1.5	129.8	14.11	68.89
14	RFCC Boiler	06-02-2026	9.2	16.4	8.2	14.7	3.1	125.5	220.85	65.64
15	RFCC Heater	06-02-2026	9.7	15.0	7.5	11.6	2.9	132.5	295.42	79.43
16	DCU Heater	06-02-2026	7.8	1.2	8.5	1.0	2.9	113.2	17.51	60.17
17	DHDS	09-02-2026	7.5	0.2	8.8	0.9	3.7	117.4	3.66	62.61
18	DHDT H-01	10-02-2026	5.4	0.3	8.9	0.8	3.4	121.5	7.71	64.47
19	DHDT H-02	10-02-2026	4.3	0.3	9.2	0.8	3.5	132.3	8.84	79.27
20	AVU-2	10-02-2026	8.9	4.4	7.6	3.9	3.0	125.3	61.57	65.48
21	HGU T7	11-02-2026	7.6	0.4	9.2	0.5	3.5	154.3	8.14	82.01
22	HGU T6	11-02-2026	8.7	0.3	8.4	0.3	3.2	145.4	5.67	77.28
Permissible Limits (mg/Nm ³)		Gas	10		80			350		
		Liquid	100		1700			480		
Test Method			IS:11255 (P-1)		IS:11255 (P-2)			IS:11255 (P-3)		



TC-14814



(AUTHORISED SIGNATORY)
RAVINDER MITTAL

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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Matha Crocker, Haryana, INDIA	ULR No	TC-14814260000509F-002F 812P-054F
Sample Description	Flue Gas Monitoring	Test Report Date	02/02/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS: 11325 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	24/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
12	ORCU LP Section	04-02-2026	85	2.42	27	226	11.36
13	ORCU RG Heater	04-02-2026	83	2.42	27	176	9.91
14	RFCC Boiler	04-02-2026	160	9.85	27	167	9.51
15	RFCC Heater	04-02-2026	87	9.25	27	284	11.97
16	DCU Heater	04-02-2026	70	3	28	178	9.20
17	DHDS	04-02-2026	70	1.3	28	226	10.87
18	DHDT H-01	10-02-2026	70	1.8	28	192	10.52
19	DHDT H-02	10-02-2026	70	1.8	28	199	10.51
20	AVU-2	10-02-2026	100	5.1	28	145	6.33
21	HGU FF	11-02-2026	60	1.3	27	156	10.43
22	HGU 76	11-02-2026	60	1.4	27	167	10.56

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/Nm ³	kg/hr	PPM
12	ORCU LP Section	04-02-2026	2.8	0.26	2.18
13	ORCU RG Heater	04-02-2026	4.1	0.40	3.58
14	RFCC Boiler	04-02-2026	19.6	36.88	17.37
15	RFCC Heater	04-02-2026	12.3	19.07	10.74
16	DCU Heater	04-02-2026	13.2	2.04	11.52
17	DHDS	04-02-2026	7.8	0.24	6.03
18	DHDT H-01	10-02-2026	3.0	0.28	4.83
19	DHDT H-02	10-02-2026	3.2	0.58	8.05
20	AVU-2	10-02-2026	6.7	3.35	6.65
21	HGU FF	11-02-2026	6.8	0.29	6.76
22	HGU 76	11-02-2026	6.9	0.27	6.02
Permissible Limits (mg/Nm ³)		Gas	180		
		Liquid	200		
Test Method			IS-13275		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naptha Cracker, Haryana, INDIA	Test Report No	202402030121-130
Sample Description	Flue Gas Monitoring	Test Report Date	02/02/2024
Date of Sample Received	23/02/2024	Method of Sampling	IS- 11256 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2024
		Test Completed On	25/02/2024

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp (°C)	Average Gas Velocity (m/s)
12	OHCU LP Section	06-02-2024	85	2.42	37	228	11.38
13	OHCU RG Heater	06-02-2024	63	2.47	27	176	9.91
14	RFCC Boiler	06-02-2024	100	3.85	27	167	9.91
15	RFCC Heater	06-02-2024	67	3.25	27	254	11.87
16	DCU Heater	09-02-2024	70	3	28	178	9.20
17	DHDS	09-02-2024	70	1.3	28	228	10.87
18	DHDT H-01	10-02-2024	70	1.8	28	192	10.82
19	DHDT H-02	10-02-2024	70	1.8	28	199	10.51
20	AVU-2	10-02-2024	100	5.1	28	140	6.53
21	HGU 77	11-02-2024	60	1.7	27	156	10.45
22	HGU 76	11-02-2024	60	1.4	27	167	10.39

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V)		
			mg/Nm ³	Kg/hr	PPM
12	OHCU LP Section	06-02-2024	ND	-	-
13	OHCU RG Heater	06-02-2024	ND	-	-
14	RFCC Boiler	06-02-2024	ND	-	-
15	RFCC Heater	06-02-2024	ND	-	-
16	DCU Heater	09-02-2024	ND	-	-
17	DHDS	09-02-2024	ND	-	-
18	DHDT H-01	10-02-2024	ND	-	-
19	DHDT H-02	10-02-2024	ND	-	-
20	AVU-2	10-02-2024	ND	-	-
21	HGU 77	11-02-2024	ND	-	-
22	HGU 76	11-02-2024	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	-		
Test Method			IS-13370		



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References

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Refinery, Haryana, INDIA
Flare Gas Monitoring
2002/03
Raj, G.

0.000000

TC14814280000705PL7580

丁巳仲夏，吳昌碩寫。

First Report Date

DECEMBER 1998

Abstracted and Indexed

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Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
23	HCU-PDS	11-02-2024	80	1.7	27	255	11.47
24	HCU	16-02-2024	70	1.3	27	162	10.88
25	M5G Pans G-301-44-101	16-02-2024	60	1.64	28	267	11.19
26	M5G Pans G-301-44-201	16-02-2024	60	1.64	28	262	11.58
27	M5G Pans G-301-H-301	16-02-2024	60	1.64	28	265	11.92
28	PHDT-BB-VI (New -107)	17-02-2024	70	1.6	27	162	10.12
29	HCU-BB-VI (New -108)	17-02-2024	55.7	1.4	27	208	10.82
30	PTA/Phthal Diester	17-02-2024	60	1.38	27	167	10.75
31	PTA/Phthal Diester	17-02-2024	60	2.36	28	226	10.20
32	PTA/Phthal Diester	17-02-2024	60	2.36	28	294	10.10
33	PROGPH	17-02-2024	100	1.8	27	278	11.26

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Sr. No.	Stack Particulars	Date of Sampling	Particulate Matter (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
23	HCU-PDS	11-02-2024	3.4	0.48	7.8	0.4	2.3	94.3	4.30	50.13
24	HCU	16-02-2024	3.1	0.3	8.5	0.3	3.2	134.4	4.48	71.64
25	MSQ Furna G-301-H-101	16-02-2024	4.5	0.3	14.1	0.7	6.3	143.2	6.72	78.11
26	MSQ Furna G-301-H-201	16-02-2024	4.5	0.3	15.4	0.7	5.5	138.5	6.44	72.55
27	MSQ Furna G-301-H-301	16-02-2024	4.2	0.3	16.3	0.8	6.2	129.4	6.08	68.78
28	QHD1 BG W (New - 101)	17-02-2024	3.6	0.3	12.5	0.8	4.8	110.7	6.72	58.84
29	HCU-B2-W (New - 102)	17-02-2024	4.3	0.8	8.4	1.8	3.2	78.8	16.76	41.03
30	PTA/Thermal Oxidiser	17-02-2024	8.2	0.3	3.8	0.3	3.0	42.3	1.36	22.46
31	PTA/CPH	17-02-2024	8.2	0.8	7.3	0.7	2.6	115.8	11.60	61.53
32	PTA/MS QH Heater	17-02-2024	8.3	0.6	14.3	1.3	0.8	42.1	3.89	22.38
33	PACORH	17-02-2024	8.7	0.5	8.4	0.8	3.0	118.5	7.16	61.29
Permissible Limits (mg/Nm ³)		Gas	10		80			380		
		Liquid	100		1700			480		
Test Method/			IS:11255 (P-1)		IS:11255 (P-2)			IS:11255 (P-7)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naphtha Cracker, Haryana, INDIA	ULR No.	TC14814280000706F-706F
Sample Description	Flue Gas Monitoring	Test Report Date	24/02/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS: 11355 (Part 7)
Sampling Conducted By	Rishi Rai	Test Started On	23/02/2026
		Test Completed On	24/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
23	HCU-PDS	11-02-2026	60	1.7	27	265	11.47
24	HCU	16-02-2026	70	1.3	27	182	10.66
25	MSQ Prime G-301-H-101	16-02-2026	60	1.64	28	267	11.18
26	MSQ Prime G-301-H-201	16-02-2026	60	1.64	28	262	11.58
27	MSQ Prime G-301-H-301	16-02-2026	60	1.64	28	305	11.92
28	DRDT BS VI (New -107)	17-02-2026	70	1.8	27	182	10.12
29	HCU-BS-VI (New -106)	17-02-2026	55.7	3.4	27	268	10.53
30	PTA/Thermal Oxidiser	17-02-2026	50	1.26	27	187	10.76
31	PTA/PCRH	17-02-2026	60	2.35	28	200	10.20
32	PTA/Hot Oil Heater	17-02-2026	60	2.35	28	264	10.16
33	PXCCRH	17-02-2026	100	1.8	27	278	11.26

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/m ³	kg/hr	PPM
23	HCU-PDS	11-02-2026	7.1	0.37	6.20
24	HCU	16-02-2026	5.6	0.19	4.88
25	MSQ Prime G-301-H-101	16-02-2026	6.2	0.38	7.18
26	MSQ Prime G-301-H-201	16-02-2026	6.6	0.45	8.29
27	MSQ Prime G-301-H-301	16-02-2026	6.2	0.43	8.03
28	DRDT BS VI (New -107)	17-02-2026	6.9	0.54	7.77
29	HCU-BS-VI (New -106)	17-02-2026	7.6	1.62	8.83
30	PTA/Thermal Oxidiser	17-02-2026	5.6	0.18	4.88
31	PTA/PCRH	17-02-2026	0	0.00	0.00
32	PTA/Hot Oil Heater	17-02-2026	0	0.00	0.00
33	PXCCRH	17-02-2026	8.7	0.58	7.68
Permissible Limits (mg/M ³)		Gas	160		
		Liquid	360		
Test Method			IS:13279		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paragol Naptha Cracker, Haryana, INDIA	Test Report No	20260200131-140
Sample Description	Flue Gas Monitoring	Test Report Date	02/02/2026
Date of Sample Received	29/02/2026	Method of Sampling	IS- 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	29/02/2026
		Test Completed On	29/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
23	HGU-PDS	11-02-2026	60	1.7	27	265	11.47
24	HCU	16-02-2026	70	1.5	27	162	10.66
25	MSG Prime G-301-H-101	16-02-2026	60	1.64	28	267	11.16
26	MSG Prime G-301-H-201	16-02-2026	60	1.64	28	262	11.58
27	MSG Prime G-301-H-301	16-02-2026	60	1.64	28	355	11.83
28	DHOT BS-VI (New -107)	17-02-2026	70	1.8	27	182	10.12
29	HGU-BS-VI (New -106)	17-02-2026	60.7	2.4	27	208	10.52
30	PTA/Thermal Oxidiser	17-02-2026	60	1.25	27	157	10.75
31	PTA/PCPH	17-02-2026	60	2.35	28	200	10.20
32	PTA/Hol Oil Heater	17-02-2026	60	2.35	28	264	10.10
33	PXCCRH	17-02-2026	100	1.5	27	275	11.25

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V)		
			mg/Nm ³	Kg/hr	PPM
23	HGU-PDS	11-02-2026	ND	-	-
24	HCU	16-02-2026	ND	-	-
25	MSG Prime G-301-H-101	16-02-2026	ND	-	-
26	MSG Prime G-301-H-201	16-02-2026	ND	-	-
27	MSG Prime G-301-H-301	16-02-2026	ND	-	-
28	DHOT BS-VI (New-107)	17-02-2026	ND	-	-
29	HGU-BS-VI (New-106)	17-02-2026	ND	-	-
30	PTA/Thermal Oxidiser	17-02-2026	ND	-	-
31	PTA/PCPH	17-02-2026	ND	-	-
32	PTA/Hol Oil Heater	17-02-2026	ND	-	-
33	PXCCRH	17-02-2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	-		
Test Method			IS-13270		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paragat Refinery, Haryana, INDIA	ULR No	TC148142600000755F-705F
Sample Description	Flue Gas Monitoring	Test Report Date	02/03/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS-11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	PX NHT	19-02-2026	30	1	26	265	11.53
35	PX Isomer	19-02-2026	56	1.2	27	285	11.84
36	PX Tatory	19-02-2026	56	1.2	27	275	11.93
37	PX-Xylene	19-02-2026	73	2	26	213	11.73
38	SSU Heater	20-02-2026	70	0.65	26	294	12.79
39	SSU INC	20-02-2026	70	0.65	26	294	13.26

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO _x)		
			mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
34	PX NHT	19-02-2026	7.9	0.1	7.9	0.1	3.0	81.4	1.45	43.27
35	PX Isomer	19-02-2026	5.7	0.1	13.6	0.4	6.0	145.5	3.72	77.34
36	PX Tatory	19-02-2026	5.9	0.2	9.2	0.3	3.5	98.5	2.00	52.35
37	PX-Xylene	19-02-2026	6.6	0.5	8.4	0.7	3.2	105.6	8.99	96.13
38	SSU Heater	20-02-2026	6.1	0.7	15.4	0.2	5.9	72.4	0.95	36.49
39	SSU INC	20-02-2026	6.4	0.6	16.6	0.3	7.1	75.6	1.28	40.82
Permissible Limits (mg/Nm ³)		Gas	10		50			300		
		Liquid	100		1750			450		
Test Method			IS-11255 (P-1)		IS-11256 (P-2)			IS-11256 (P-7)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division)	ULR No.	TC-148142600003755F-760F
Sample Description	Parsipet Naptha Cracker, Haryana, INDIA	Test Report Date	02/02/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS: 11256 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	PX NHT	19-02-2026	20	1	25	265	11.50
35	PX Isomer	19-02-2026	34	1.2	27	269	11.64
36	PX Tatory	19-02-2026	38	1.2	27	275	11.93
37	PX-Xylene	19-02-2026	78	2	28	215	11.75
38	BBU Heater	20/02/2026	79	0.65	29	296	12.78
39	BBU INC	26/02/2026	70	0.65	29	294	13.26

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM
34	PX NHT	19-02-2026	7.8	0.14	6.63
35	PX Isomer	19-02-2026	9.7	0.26	8.47
36	PX Tatory	19-02-2026	ND	-	-
37	PX-Xylene	19-02-2026	ND	-	-
38	BBU Heater	20/02/2026	12.4	0.17	10.82
39	BBU INC	26/02/2026	15.6	0.22	13.62
Permissible Limits (mg/Nm ³)		Gas	100		
		Liquid	200		
Test Method			IS-13279		



TC-14814



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery Cracker, Haryana, INDIA	Test Report No	202902030141-146
Sample Description	Flue Gas Monitoring	Test Report Date	02/03/2026
Date of Sample Received	23/02/2026	Method of Sampling	IS: 11355 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	23/02/2026
		Test Completed On	26/02/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	PX NHT	18-02-2026	30	1	28	365	11.58
35	PX Isomer	18-02-2026	38	1.2	27	359	11.84
36	PX Tatory	18-02-2026	38	1.2	27	275	11.93
37	PX-Xylene	18-02-2026	79	2	28	213	11.72
38	BBU Heater	20/02/2026	70	0.88	28	298	12.79
39	BBU INC	20/02/2026	70	0.88	28	294	13.26

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V) ¹		
			mg/Nm ³	Rg/ltr	PPM
34	PX NHT	18-02-2026	ND	-	-
35	PX Isomer	18-02-2026	ND	-	-
36	PX Tatory	18-02-2026	ND	-	-
37	PX-Xylene	18-02-2026	ND	-	-
38	BBU Heater	20/02/2026	ND	-	-
39	BBU INC	20/02/2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	8		
Test Method			IS-13279		



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Test Report

Issued To : **Ms Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Haryana, INDIA

Sample Description : **Flue Gas Monitoring**
Date of Sample Received : **23/02/2026**
Sampling Conducted By : **Rishi Raj**

ULR No : **TC-14814260000006F-605F**

Test Report Date : **02/03/2026**
Method of Sampling : **IS: 11286 (Part I)**
Test Started On : **23/02/2026**
Test Completed On : **26/02/2026**

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-28	07/02/2026	75	1.9	38	223	11.47
2	SRU-77	07/02/2026	70	1.8	28	245	12.56

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	SRU-28	07/02/2026	114.8	8.1	43.6	65.2	4.59	34.66	3.28	0.23	2.88
2	SRU-77	07/02/2026	134.3	8.8	47.4	63.1	3.77	35.22	4.12	0.29	3.60
Permissible Limits (mg/Nm ³)			-			358			180		
Test Method			IS:11286 (P-2)			IS:11286 (P-7)			IS:11279		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naphtha Cracker, Haryana, INDIA	ULR No.	TC-148/42600009606F-906F
Sample Description	Flue Gas Monitoring	Test Report Date	02/03/2020
Date of Sample Received	25/02/2020	Method of Sampling	IS-11266 (Part 3)
Sampling Conducted By	Rishi Pal	Test Started On	26/02/2020
		Test Completed On	26/02/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	SRU-26	02/03/2020	30	1	28	265	11.58
35	SRU-77	02/03/2020	64	1.2	27	280	11.84

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	Kg/hr	PPM
34	SRU-26	02/03/2020	ND	-	-
35	SRU-77	02/03/2020	ND	-	-
Permissible Limits (mg/Nm ³)					
Test Method			IS-11266 (P-4)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Haryana, INDIA	ULR No	TG148142000001151P-1152P
Sample Description	Flue Gas Monitoring	Test Report Date	01/04/2020
Date of Sample Received	27/03/2020	Method of Sampling	IS-11295 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	27/03/2020
		Test Completed On	31/03/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mm.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-26	24/03/2020	72	1.8	29	325	11.23
2	SRU-77	24/03/2020	70	1.8	29	346	11.45

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/m ³	kg/hr	PPM	mg/m ³	kg/hr	PPM	mg/m ³	kg/hr	PPM
1	SRU-26	24/03/2020	107.8	7.8	41.8	67.8	4.78	58.88	3.78	0.29	3.08
2	SRU-77	24/03/2020	132.8	8.8	49.8	85.5	4.10	50.28	4.43	0.32	3.75
Permissible Limits (mg/m ³)			-			380			180		
Test Method			IS-11286 (P-2)			IS-11286 (P-7)			IS-13270		



TC-14814



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Refinery, Haryana, INDIA	U.R. No.	TC-14814280001151(P-1152F)
Sample Description	Fuel Gas Monitoring	Test Report Date	01/04/2020
Date of Sample Received	27/03/2020	Method of Sampling	IS-11265 (Part 1)
Sampling Conducted By	Rishi Pal	Test Started On	27/03/2020
		Test Completed On	31/03/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	SRU-26	24/03/2020	70	1.8	29	325	11.22
35	SRU-77	24/03/2020	70	1.8	28	248	11.45

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	Kg/hr	PPM
34	SRU-26	24/03/2020	ND	-	-
35	SRU-77	24/03/2020	ND	-	-
Permissible Limits (mg/Nm ³)					
Test Method			IS-11265 (P-4)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Haryana, INDIA	ULR No	TC-14814260001739F-1750F
Sample Description	Flue Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS: 11255 (Part-7)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2026
		Test Completed On	06/05/2026

Stack Detail

Gr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	17-04-2026	70	3.3	26	153	6.17
2	HRSG-2	17-04-2026	70	3.3	26	151	6.36
3	HRSG-3	17-04-2026	70	3.3	26	156	6.89
4	HRSG-4	17-04-2026	70	3.3	26	159	11.65
5	HRSG-5	18-04-2026	70	3.3	26	172	9.91
6	UG-01	20-04-2026	100	5.96	28	136	10.10
7	UG-02	20-04-2026	100	5.96	28	160	10.38
8	CPR-VAP-1	20-04-2026	100	5.34	28	168	10.01
9	AVU-1	21-04-2026	100	5.1	28	152	10.11
10	CCRU Reformer Heater-201, 202, 203 FF	21-04-2026	60	1.64	28	284	12.39
11	CCRU NHT Heater-FF 101	21-04-2026	70	2.34	26	295	11.26
12	CCRU Reformer Heater-FF 201	21-04-2026	70	2.34	28	242	10.76

Test Result

Gr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	HRSG-1	17-04-2026	8.1	2.1	6.3	1.4	2.0	185.3	42.90	98.45
2	HRSG-2	17-04-2026	7.5	0.9	7.6	0.5	3.9	208.8	14.30	110.06
3	HRSG-3	17-04-2026	7.1	0.5	7.2	0.5	2.7	214.6	15.16	112.83
4	HRSG-4	17-04-2026	7.6	1.5	7.69	1.5	3.0	202.8	39.55	167.75
5	HRSG-5	18-04-2026	8.4	1.6	6.5	1.2	2.4	192.2	37.25	152.18
6	UG-01	20-04-2026	7.3	1.9	8.4	2.1	3.2	131.7	33.45	70.50
7	UG-02	20-04-2026	7.2	1.5	6.3	1.7	6.1	126.4	26.03	67.15
8	CPR-VAP-1	20-04-2026	7.6	3.9	6.4	4.3	3.3	162.3	83.47	66.27
9	AVU-1	21-04-2026	7.7	0.3	9.2	0.3	3.5	123.6	4.49	64.10
10	CCRU Reformer Heater-201, 202, 203 FF	21-04-2026	8.9	0.3	7.9	0.4	3.0	116.1	6.08	51.18
11	CCRU NHT Heater-FF 101	21-04-2026	8.7	0.9	8.3	0.4	3.2	162.4	8.47	66.32
12	CCRU Reformer Heater-FF 201	21-04-2026	7.4	1.0	9.1	1.3	3.8	141.6	16.75	75.37
Permissible Limits (mg/Nm ³)			Gas	10	50			350		
			Liquid	100	1700			480		
Test Method			IS: 11255 (P-1)		IS: 11255 (P-2)			IS: 11255 (P-7)		



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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naphtha Cracker, Haryana, INDIA	ULR No.	TC148142900001739F-1750F
Sample Description	Flue Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS-11255 (Part 7)
Sampling Conducted By	Rish Pal	Test Started On	04/05/2026
		Test Completed On	09/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	17-04-2026	70	3.3	20	163	6.17
2	HRSG-2	17-04-2026	70	3.3	20	161	6.38
3	HRSG-3	17-04-2026	70	3.3	30	166	6.66
4	HRSG-4	17-04-2026	70	3.3	29	159	11.80
5	HRSG-5	18-04-2026	70	3.3	29	172	9.91
6	UR-01	20-04-2026	100	9.90	28	136	10.10
7	UR-02	20-04-2026	100	9.90	28	163	10.38
8	OPR/VNP-1	20-04-2026	100	5.34	28	168	16.91
9	AVU-1	21-04-2026	100	5.1	28	162	16.11
10	CCRU Reformer Heater-201, 202, 203 FF	21-04-2026	62	1.84	28	284	12.38
11	CCRU NHT Heater-FF 101	21-04-2026	70	2.54	28	280	11.26
12	CCRU Reformer Heater-FF 205	21-04-2026	70	2.54	28	242	10.76

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM
1	HRSG-1	17-04-2026	4.2	1.11	3.67
2	HRSG-2	17-04-2026	7.4	0.16	3.08
3	HRSG-3	17-04-2026	3.6	0.48	0.12
4	HRSG-4	17-04-2026	4.3	0.84	3.75
5	HRSG-5	18-04-2026	3.2	0.92	2.75
6	UR-01	20-04-2026	4.9	1.34	4.36
7	UR-02	20-04-2026	5.4	1.11	4.71
8	OPR/VNP-1	20-04-2026	6.6	3.28	5.76
9	AVU-1	21-04-2026	9.3	0.35	8.12
10	CCRU Reformer Heater-201, 202, 203 FF	21-04-2026	13.1	0.08	11.44
11	CCRU NHT Heater-FF 101	21-04-2026	17.2	0.90	16.81
12	CCRU Reformer Heater-FF 205	21-04-2026	18.4	2.58	16.06
Permissible Limits (mg/Nm ³)		Gas	150		
		Liquid	200		
Test Method			IS-13278		



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Test Report

Issued To:	M/s Indian Oil Corporation Limited (Refinery Division)	Test Report No	: 20260470110-121
Sample Description	Parpet Naptha Cracker, Haryana, INDIA	Test Report Date	: 11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	: IS: 11200 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	: 04/05/2026
		Test Completed On	: 06/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	17-04-2026	70	3.3	29	163	9.17
2	HRSG-2	17-04-2026	75	3.3	29	161	9.36
3	HRSG-3	17-04-2026	75	3.3	29	166	9.89
4	HRSG-4	17-04-2026	75	3.3	29	159	11.85
5	HRSG-5	18-04-2026	70	3.3	29	172	9.91
6	UB-01	20-04-2026	100	9.99	28	186	10.10
7	UB-02	20-04-2026	100	9.99	28	189	10.38
8	CPPI-WHP-1	20-04-2026	100	9.99	28	198	10.01
9	AVU-1	21-04-2026	100	6.1	28	182	10.11
10	CCRU Refractor Heater-201, 202,203 PP	21-04-2026	60	1.64	28	284	12.35
11	CCRU NHT Heater-PP 101	21-04-2026	70	2.34	28	280	11.28
12	CCRU Refractor Heater-PP 205	21-04-2026	70	2.34	28	242	10.76

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V)		
			mg/Nm ³	Kg/hr	PPM
1	HRSG-1	17-04-2026	ND	-	-
2	HRSG-2	17-04-2026	ND	-	-
3	HRSG-3	17-04-2026	ND	-	-
4	HRSG-4	17-04-2026	ND	-	-
5	HRSG-5	18-04-2026	ND	-	-
6	UB-01	20-04-2026	ND	-	-
7	UB-02	20-04-2026	ND	-	-
8	CPH-WHP-1	20-04-2026	ND	-	-
9	AVU-1	21-04-2026	ND	-	-
10	CCRU Refractor Heater-201, 202,203 PP	21-04-2026	ND	-	-
11	CCRU NHT Heater-PP 101	21-04-2026	ND	-	-
12	CCRU Refractor Heater-PP 205	21-04-2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	-		
Test Method		IS-13276			



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Test Report

Issued To:	M/s Indian Oil Corporation Limited (Refinery Division) Fertiliser Refinery, Haryana, INDIA	ULR No:	TC148142800001751F-1761F
Sample Description:	Flue Gas Monitoring	Test Report Date:	8/2F-854F
Date of Sample Received:	20/04/2020	Method of Sampling:	IS: 11255 (Part 7)
Sampling Conducted By:	Rishi Pal	Test Started On:	24/05/2020
		Test Completed On:	28/05/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
13	ORCU LP Section	23-04-2020	65	2.42	30	220	11.37
14	ORCU RG Heater	23-04-2020	63	2.42	30	178	10.42
15	RFCC Boiler	23-04-2020	100	0.65	30	168	9.68
16	RFCC Heater	23-04-2020	67	0.26	30	235	11.62
17	ODU Heater	23-04-2020	70	3	30	143	9.48
18	SHDS	23-04-2020	75	1.5	30	228	10.42
19	CHDT H-01	23-04-2020	70	1.8	30	190	10.74
20	CHDT H-02	23-04-2020	70	1.8	30	202	10.58
21	AVU-2	23-04-2020	100	0.1	30	146	9.93
22	HGU 77	23-04-2020	60	1.7	29	214	11.05
23	HGU 78	23-04-2020	60	1.8	29	203	11.54

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/m ³	Kg/hr	mg/m ³	Kg/hr	PPM	mg/m ³	Kg/hr	PPM
13	ORCU LP Section	23-04-2020	8.8	0.2	4.2	0.1	1.6	130.2	3.55	69.20
14	ORCU RG Heater	23-04-2020	9.3	0.3	3.4	0.2	1.3	126.7	7.83	66.81
15	RFCC Boiler	23-04-2020	9.2	1.1	7.7	1.0	2.9	121.2	15.11	64.42
16	RFCC Heater	23-04-2020	7.8	0.3	7.8	0.3	3.0	130.4	3.78	58.42
17	ODU Heater	23-04-2020	8.8	1.1	6.2	0.8	2.4	111.8	13.80	56.42
18	SHDS	23-04-2020	8.8	0.4	6.9	0.5	3.4	115.5	3.83	61.39
19	CHDT H-01	23-04-2020	4.7	0.4	9.3	0.5	3.5	118.8	0.62	63.04
20	CHDT H-02	23-04-2020	4.2	0.3	9.1	0.5	3.5	130.9	7.19	69.58
21	AVU-2	23-04-2020	7.8	0.6	7.8	0.9	3.5	117.4	13.91	62.48
22	HGU 77	23-04-2020	9.1	0.3	9.6	0.3	3.3	151.2	8.42	80.37
23	HGU 78	23-04-2020	7.8	1.2	9.2	1.8	3.5	143.3	28.01	76.17
Permissible Limits (mg/m ³)			Gas		50			360		
			Liquid		100			480		
Test Method			IS:11255 (P-1)		IS:11255 (P-2)			IS:11255 (P-7)		



TC-14814



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Ranspet Naphtha Cracker, Haryana, INDIA	ULR No.	TC148142600001761F-1761F
Sample Description	Flue Gas Monitoring	Test Report Date	11/05/2024
Date of Sample Received	04/05/2024	Method of Sampling	IS 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2024
		Test Completed On	09/05/2024

Stack Detail

Sl. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
13	OHCU LP Section	22-04-2026	85	2.42	30	200	11.57
14	OHCU RG Heater	22-04-2026	83	2.42	30	176	10.42
15	RFCC Boiler	25-04-2026	100	9.55	30	185	9.58
16	RFCC Heater	25-04-2026	67	9.25	30	285	11.62
17	DCU Heater	25-04-2026	70	3	30	145	9.45
18	DHDS	22-04-2026	75	1.3	30	228	10.42
19	DHDT H-01	23-04-2026	75	1.8	30	193	10.74
20	DHDT H-02	23-04-2026	75	3.6	30	202	10.58
21	AVU-2	23-04-2026	100	5.1	30	145	6.53
22	HGU FY	25-04-2026	60	1.7	29	214	11.03
23	HGU TR	25-04-2026	60	1.4	29	263	11.54

Test Result

Sl. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/Nm ³	kg/hr	PPM
13	OHCU LP Section	22-04-2026	2.2	0.08	1.02
14	OHCU RG Heater	22-04-2026	5.9	0.37	2.55
15	RFCC Boiler	25-04-2026	18.2	2.27	15.69
16	RFCC Heater	25-04-2026	11.8	0.33	9.55
17	DCU Heater	25-04-2026	12.8	1.55	11.03
18	DHDS	22-04-2026	6.9	0.38	6.02
19	DHDT H-01	23-04-2026	4.7	0.26	4.16
20	DHDT H-02	25-04-2026	6.2	0.51	6.03
21	AVU-2	23-04-2026	6.5	0.81	5.94
22	HGU FY	25-04-2026	6.9	0.38	6.02
23	HGU TR	25-04-2026	7.5	1.47	6.55
Permissible Limits (mg/Nm ³)		Gas	150		
		Liquid	200		
Test Method			IS:13270		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naptha Cracker, Haryana, INDIA	Test Report No	202604170122-121
Sample Description	Pure Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2026
		Test Completed On	09/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
13	DHCU LP Section	22-04-2026	65	2.40	35	235	11.17
14	DHCU PG Heater	22-04-2026	63	2.40	35	175	10.42
15	RPGC Boiler	23-04-2026	58	0.35	30	165	9.68
16	RPGC Heater	23-04-2026	67	0.25	30	265	11.52
17	OCU Heater	25-04-2026	75	3	30	145	9.45
18	DHDS	22-04-2026	70	1.5	30	225	10.42
19	DHDT H-01	23-04-2026	75	1.5	30	190	10.74
20	DHDT H-02	23-04-2026	70	1.5	30	202	10.56
21	AVU-2	23-04-2026	100	5.1	30	145	9.93
22	HGU 77	25-04-2026	80	1.7	25	214	11.05
23	HGU 78	25-04-2026	80	1.4	25	200	11.34

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V) ¹		
			mg/Nm ³	Kg/hr	PPM
13	DHCU LP Section	22-04-2026	ND	-	-
14	DHCU PG Heater	22-04-2026	ND	-	-
15	RPGC Boiler	23-04-2026	ND	-	-
16	RPGC Heater	23-04-2026	ND	-	-
17	OCU Heater	25-04-2026	ND	-	-
18	DHDS	22-04-2026	ND	-	-
19	DHDT H-01	23-04-2026	ND	-	-
20	DHDT H-02	23-04-2026	ND	-	-
21	AVU-2	23-04-2026	ND	-	-
22	HGU 77	25-04-2026	ND	-	-
23	HGU 78	25-04-2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	S		
Test Method			IS-13270		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Refinery, Harpara, INDIA	ULR No.	TC14814260001782F-1772F
Sample Description	Pure Gas Monitoring	Test Report Date	11/08/2026
Date of Sample Received	04/06/2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	04/06/2026
		Test Completed On	09/06/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
24	HGU-PDS	25-04-2026	60	1.7	29	266	11.92
25	HCU	25-04-2026	70	1.3	29	266	11.10
26	MSQ Prime G-301-H-101	24-04-2026	40	1.64	30	306	11.20
27	MSQ Prime G-301-H-201	24-04-2026	60	1.64	30	304	11.46
28	MSQ Prime G-301-H-301	24-04-2026	60	1.64	30	306	11.51
29	GHDT BS VI (New-107)	25-04-2026	70	1.8	30	184	9.94
30	HGU-BS-VI (New-108)	24-04-2026	52.7	3.4	30	210	10.75
31	PTA/Thermal Oxidiser	25-04-2026	35	1.25	29	60	9.65
32	PTA/PCPH	25-04-2026	60	2.50	31	302	10.52
33	PTA/NOx Heater	25-04-2026	60	2.50	31	366	10.09
34	ProCRRH	27-04-2026	100	1.9	29	279	11.72

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/m ³	kg/hr	mg/m ³	kg/hr	PPM	mg/m ³	kg/hr	PPM
24	HGU-PDS	25-04-2026	9.2	0.74	8.3	0.7	3.2	93.3	7.40	49.06
25	HCU	26-04-2026	6.3	3.8	7.3	3.6	2.8	131.1	62.58	69.68
26	MSQ Prime G-301-H-101	24-04-2026	4.1	1.1	13.3	2.9	5.1	145.3	27.64	74.52
27	MSQ Prime G-301-H-201	24-04-2026	3.8	0.8	14.4	2.0	3.5	151.3	18.88	82.79
28	MSQ Prime G-301-H-301	24-04-2026	4.2	0.7	10.3	2.5	3.8	129.5	29.57	67.24
29	GHDT BS VI (New-107)	25-04-2026	4.8	1.0	11.9	2.5	4.5	100.7	23.23	57.78
30	HGU-BS-VI (New-108)	24-04-2026	4.3	0.8	6.4	0.9	3.8	74.8	6.95	36.76
31	PTA/Thermal Oxidiser	25-04-2026	6.4	1.2	6.8	1.2	1.3	40.3	5.50	21.42
32	PTA/PCPH	24-04-2026	6.1	1.9	6.4	0.7	2.4	112.7	11.81	66.90
33	PTA/NOx Heater	26-04-2026	7.8	6.5	13.4	0.6	5.1	39.6	2.82	21.26
34	ProCRRH	27-04-2026	8.4	0.2	7.2	0.1	2.7	115.3	1.97	58.11
Permissible Limits (mg/m ³)			Gas		SO ₂			NO ₂		
			Liquid		100			480		
Test Method			IS:11286 (P-1)		IS:11255 (P-2)			IS:11255 (P-7)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Ponpet Naphta Cracker, Haryana, INDIA	ULR No	TC-148142800001762F-1772F
Sample Description	Flue Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS: 11255 (Part 2)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2026
		Test Completed On	09/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
24	HCU-PDS	25-04-2026	60	1.7	29	266	11.92
25	HCU	25-04-2026	70	1.3	29	183	11.10
26	MSQ Prime G-301-H-101	24-04-2026	60	1.64	30	265	11.20
27	MSQ Prime G-301-H-201	24-04-2026	60	1.64	30	264	11.48
28	MSQ Prime G-301-H-301	24-04-2026	60	1.64	30	266	11.31
29	DHDT SS VI (New -107)	25-04-2026	70	1.6	30	184	9.94
30	HCU-BS-VI (New -106)	24-04-2026	65.7	3.4	30	218	10.76
31	PTA/Thermal Oxidiser	29-04-2026	50	1.25	28	62	9.56
32	PTA/CPH	29-04-2026	60	1.35	31	202	10.52
33	PTA/HA Oil Heater	29-04-2026	60	2.55	31	208	10.69
34	PXCCRH	27-04-2026	100	1.9	29	278	11.73

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/m ³	Kg/hr	PPM
24	HCU-PDS	25-04-2026	6.2	0.53	6.41
25	HCU	25-04-2026	4.7	0.24	4.10
26	MSQ Prime G-301-H-101	24-04-2026	5.3	1.66	6.12
27	MSQ Prime G-301-H-201	24-04-2026	6.5	1.25	7.42
28	MSQ Prime G-301-H-301	24-04-2026	9.2	1.50	8.03
29	DHDT SS VI (New -107)	25-04-2026	7.8	1.69	6.90
30	HCU-BS-VI (New -106)	24-04-2026	6.6	0.41	5.76
31	PTA/Thermal Oxidiser	29-04-2026	4.6	0.53	4.69
32	PTA/CPH	29-04-2026	0	0.00	0.00
33	PTA/Hot Oil Heater	29-04-2026	0	0.00	0.00
34	PACCRH	27-04-2026	7.8	0.14	6.61
Permissible Limits (mg/m ³)		Gas	158		
		Liquid	200		
Test Method			IS-13278		



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Third Moment

Issued To:	M/s Indian Oil Corporation Limited (Refinery Division) Pallgarh Naphtha Cracker, Haryana, INDIA
Sample Description:	Flare Gas Monitoring
Date of Sample Received:	04/06/2026
Sampling Conducted By:	Sanku Raj

Test Report No.	202604170132-147
Test Report Date	11/05/2026
Method of Sampling	IS 11295 (Part 7)
Test Started On	04/05/2026
Test Completed On	09/05/2026

Stack Design

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
24	HCU-PDR	23-04-2026	80	1.7	29	266	11.92
25	HCU	23-04-2026	70	1.3	29	183	11.10
26	MBO Prime G-301-H-301	24-04-2026	80	1.64	30	263	11.26
27	MBO Prime G-301-H-201	24-04-2026	80	1.64	30	264	11.48
28	MBO Prime G-301-H-301	24-04-2026	80	1.64	30	266	11.51
29	CHDT 83 V (New - 107)	25-04-2026	70	1.6	30	184	9.94
30	HSEB-VI (New - 108)	24-04-2026	89.7	3.4	30	210	10.76
31	PTA/Thermal Oxidiser	29-04-2026	80	1.23	28	82	9.86
32	PTA/CPR	29-04-2026	80	2.35	31	200	10.52
33	PTA/Hot Oil Heater	29-04-2026	80	2.35	31	266	10.69
34	PAC/GRH	27-04-2026	100	1.8	29	278	11.73

Thomas H. Davenport

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V) ¹		
			mg/Nm ³	µg/hr	ppm
24	HCU-PDS	25-04-2026	ND	-	-
25	HCU	25-04-2026	ND	-	-
26	MSO Pyrene G-301-H-101	24-04-2026	ND	-	-
27	MSO Pyrene G-301-H-201	24-04-2026	ND	-	-
28	MSO Pyrene G-301-H-301	24-04-2026	ND	-	-
29	DHDT BS VI (New -107)	25-04-2026	ND	-	-
30	HCU BS VI (New -108)	24-04-2026	ND	-	-
31	PTA Thermal Oxidiser	29-04-2026	ND	-	-
32	PTA/CPH	29-04-2026	ND	-	-
33	PTA Hot Oil Heater	29-04-2026	ND	-	-
34	PXCCR	27-04-2026	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	-		
		Liquid	-		
Test Method			IS-13279		



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Test Report

Issued To	Oil India Corporation Limited (Refinery Division) Panipat Refinery, Haryana, INDIA	ULR No	TC14814260001773F-1778F
Sample Description	Fuel Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Raj	Test Started On	04/05/2026
		Test Completed On	04/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
35	FX NHT	27-04-2026	30	1	29	268	11.56
36	FX Isomer	28-04-2026	66	1.2	30	285	11.73
37	FX Tatory	28-04-2026	36	1.2	30	275	11.67
38	FX-Xylene	28-04-2026	70	5	32	215	11.37
39	BBU Heater	29-04-2026	70	0.85	32	208	10.66
40	BBU INC	29-04-2026	70	0.85	32	180	9.58

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)		Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
35	FX NHT	27-04-2026	6.4	0.5	8.8	0.8	3.4	81.2	5.00	43.18
36	FX Isomer	28-04-2026	6.3	0.4	13.8	0.9	6.2	142.8	5.34	76.90
37	FX Tatory	28-04-2026	4.7	0.1	9.4	0.2	3.2	66.8	2.90	60.93
38	FX-Xylene	28-04-2026	3.6	0.2	9.8	0.3	3.7	101.6	2.95	84.03
39	BBU Heater	29-04-2026	9.2	0.7	11.5	0.2	4.0	88.3	3.44	28.30
40	BBU INC	29-04-2026	9.1	0.8	15.2	0.2	5.8	72.7	6.56	28.64
Permissible Limits (mg/Nm ³)		Gas	10		80			380		
		Liquid	100		1700			450		
Test Method			IS-11255 (P-1)		IS-11255 (P-2)			IS-11255 (P-7)		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division)	ULR No	TC148/142600001773F-1778F
Sample Description	Purpan Naptha Cracker, Haryana, INDIA	Test Report Date	11/05/2024
Date of Sample Received	04/05/2024	Method of Sampling	IS 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2024
		Test Completed On	09/05/2024

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
35	PX NHT	27-04-2024	30	1	29	368	11.56
36	PX Isomer	28-04-2024	50	1.2	30	285	11.73
37	PX Tarry	28-04-2024	58	1.2	30	273	11.67
38	PX Xylene	28-04-2024	78	2	32	219	11.37
39	BBU Heater	29-04-2024	70	0.85	32	208	10.68
40	BBU INC	29-04-2024	75	0.85	32	180	9.38

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)		
			mg/m ³	kg/hr	PPM
35	PX NHT	27-04-2024	8.2	0.51	7.15
36	PX Isomer	28-04-2024	8.3	0.61	8.12
37	PX Tarry	28-04-2024	ND	-	-
38	PX Xylene	28-04-2024	ND	-	-
39	BBU Heater	29-04-2024	11.2	0.69	9.70
40	BBU INC	29-04-2024	13.5	1.18	11.75
Permissible Limits (mg/m ³)		Gas	100		
		Liquid	300		
Test Method			IS-13275		



TC-14814



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Total Haploids

Issues To	M/s Indian Oil Corporation Limited (Refinery Division)	Test Report No	202604170143-147
	Panipat Naphtha Cracker, Haryana, INDIA	Test Report Date	11/05/2026
Sample Description	Flue Gas Monitoring	Method of Sampling	IS-11285 (Part 7)
Date of Sample Received	04/05/2026	Test Started On	04/05/2026
Sampling Conducted By	Rishi Pal	Test Completed On	05/05/2026

Search Output

Gr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
35	PX NHT	27-04-2023	30	1	29	268	11.58
36	PX Isolator	28-04-2023	55	1.2	30	255	11.73
37	PX Filter	28-04-2023	55	1.2	30	273	11.87
38	PX-Xylene	28-04-2023	75	2	32	215	11.37
39	BBU Heater	29-04-2023	75	0.85	33	238	10.66
40	BBU INC	29-04-2023	70	0.85	32	180	9.35

Topic Sentence

Sr. No.	Stack Particulars	Date of Sampling	Nickel & Vanadium (as Ni & V)†		
			mg/m³	kg/hr	ppm
35	PK H/T	27-04-2026	ND	-	-
36	PK Isomer	28-04-2026	ND	-	-
37	PK Taring	28-04-2026	ND	-	-
38	PK-Xylene	28-04-2026	ND	-	-
39	BBU Header	29-04-2026	ND	-	-
40	BBU WC	29-04-2026	ND	-	-
Permissible Limits (mg/m³)		Gas	-		
		Liquid	-		
Test Method			IS-13376		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Refinery, Haryana, INDIA	ULR No	TC148142600001779F-1781F
Sample Description	Flue Gas Monitoring	Test Report Date	11/05/2026
Date of Sample Received	04/05/2026	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	04/05/2026
		Test Completed On	09/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-26	29-04-2026	75	1.5	32	243	12.00
2	SRU-37	29-04-2026	75	1.6	32	223	11.14

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	SRU-26	29-04-2026	113.4	6.0	48.4	51.4	3.44	27.93	3.38	0.38	4.73
2	SRU-37	29-04-2026	121.5	6.5	43.3	52.5	3.53	32.64	5.42	0.19	2.98
Permissible Limits (mg/Nm ³)			-			350			150		
Test Method			IS:11266 (P-2)			IS:11255 (P-7)			IS:13270		



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Test Report

Issued To:	M/s Indian Oil Corporation Limited (Refinery Division) Pimpri Naphtha Cracker, Haryana, INDIA	ULR No:	TC148142800001779F-1781F
Sample Description:	Flue Gas Monitoring	Test Report Date:	11/05/2020
Date of Sample Received:	04/05/2020	Method of Sampling:	IS: 11255 (Part 7)
Sampling Conducted By:	Rishi Pal	Test Started On:	04/05/2020
		Test Completed On:	04/05/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	SPL-26	29-04-2020	30	1	32	345	12.00
35	SPL-27	29-04-2020	66	1.2	32	223	11.14

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	Rg/hr	PPM
34	SPL-26	29-04-2020	ND	-	-
35	SPL-27	29-04-2020	ND	-	-
Permissible Limits (mg/Nm ³)					
Test Method			IS:11255 (P-4)		



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Test Report

Issued To	Oil India Oil Corporation Limited (Refinery Division) Petrol Refinery, Haryana, INDIA	ULR No.	TC14814260002106F-2106F
Sample Description	Flue Gas Monitoring	Test Report Date	24/05/2026
Date of Sample Received	23/05/2026	Method of Sampling	IS: 11265 (Part 7)
Sampling Conducted By	Rishi Pal	Test Started On	25/05/2026
		Test Completed On	23/05/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-36	15-05-2026	70	1.9	34	247	11.58
2	SRU-67	15-05-2026	70	1.9	33	221	12.68

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	SRU-36	15-05-2026	111.5	1.3	42.5	56.4	0.68	31.04	4.23	0.95	3.63
2	SRU-67	15-05-2026	119.8	5.8	43.6	49.0	2.44	28.38	8.80	0.34	6.01
Permissible Limits (mg/Nm ³)			-			180			150		
Test Method			IS:11265 (P-2)			IS:11265 (P-7)			IS:13276		



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Test Report

Issued To : M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker, Haryana, INDIA

Sample Description : Flue Gas Monitoring

Date of Sample Received : 20/05/2025

Sampling Conducted By : Rishi Pal

JLR No : TC14814280002105F-2106F

Test Report Date : 04/05/2025

Method of Sampling : IS: 11255 (Part 7)

Test Started On : 20/05/2025

Test Completed On : 23/05/2025

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
34	SRU-26	15-05-2025	70	1.8	34	247	11.58
35	SRU-67	15-05-2025	70	1.8	33	231	12.69

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	kg/hr	PPM
34	SRU-26	15-05-2025	ND	-	-
35	SRU-67	15-05-2025	ND	-	-
Permissible Limits (mg/Nm ³)					
Test Method			IS:11255 (P-4)		



TC-14214



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Test Report

Issued To : M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Haryana, INDIA

Sample Description : Flue Gas Monitoring
Date of Sample Received : 06/07/2025
Sampling Conducted By : Sachin Kumar

ULR No : TC148142600002344F-2353F

Test Report Date : 11/07/2025
Method of Sampling : IS: 11255 (Part 7)
Test Started On : 06/07/2025
Test Completed On : 10/07/2025

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	18-06-2025	70	3.3	34	188	9.55
2	HRSG-2	18-06-2025	70	3.3	34	188	8.56
3	HRSG-3	18-06-2025	70	3.3	34	188	11.70
4	HRSG-4	20-06-2025	70	3.3	33	162	12.81
5	HRSG-5	20-06-2025	70	3.3	34	175	10.43
6	UB-03	18-06-2025	140	8.95	29	138	10.33
7	OPPV-VHP-1	18-06-2025	100	3.38	35	133	9.81
8	CCRJ Reformar Heater-201, 202,203 FF	22-06-2025	80	1.64	36	291	11.98
9	CCRJ NHT Heater-FF 204	22-06-2025	70	2.34	36	178	10.76
10	CCRJ Reformar Heater-FF 205	22-06-2025	70	2.34	36	145	10.05

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)	
			mg/Mscf	kg/hr
1	HRSG-1	18-06-2025	3.8	1.1
2	HRSG-2	18-06-2025	4.9	1.0
3	HRSG-3	18-06-2025	8.5	2.1
4	HRSG-4	20-06-2025	8.6	1.5
5	HRSG-5	20-06-2025	9.9	1.5
6	UB-03	18-06-2025	7.5	16.8
7	OPPV-VHP-1	18-06-2025	5.9	1.3
8	CCRJ Reformar Heater-201, 202,203 FF	22-06-2025	8.2	0.4
9	CCRJ NHT Heater-FF 204	22-06-2025	6.9	0.8
10	CCRJ Reformar Heater-FF 205	22-06-2025	7.1	0.8
Permissible Limits (mg/Nm³)		Gas	10	
		Liquid	100	
Test Method			IS:11255 (P-1)	

End of the Report



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Naptha Cracker, Haryana, INDIA	Test Report No	302806190110-121
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	IS: 11266 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	18-06-2020	70	3.3	34	188	8.55
2	HRSG-2	18-06-2020	70	3.3	34	188	8.56
3	HRSG-3	18-06-2020	70	3.3	34	196	11.70
4	HRSG-4	20-06-2020	70	3.3	33	182	12.51
5	HRSG-5	20-06-2020	70	3.3	34	175	10.43
6	UR-02	19-06-2020	100	9.30	28	130	10.33
7	CFR-VHR-1	19-06-2020	100	9.34	28	120	8.61
8	CCRU Reformer Heater-201, 202,203 FF	22-06-2020	60	1.04	36	261	11.96
9	CCRU NHT Heater-FF 204	22-06-2020	70	2.34	36	175	10.76
10	CCRU Reformer Heater-FF 205	22-06-2020	70	2.34	36	145	10.03

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	HRSG-1	18-06-2020	5.9	1.4	2.5	170.5	39.06	93.61
2	HRSG-2	18-06-2020	5.9	1.3	2.2	212.8	43.26	113.36
3	HRSG-3	18-06-2020	7.5	2.0	3.0	235.8	52.66	118.65
4	HRSG-4	20-06-2020	5.2	1.4	2.0	206.7	50.11	110.93
5	HRSG-5	20-06-2020	6.6	1.5	2.6	184.6	50.47	98.12
6	UR-02	19-06-2020	7.4	15.5	3.0	128.9	272.09	65.51
7	CFR-VHR-1	19-06-2020	5.8	1.3	2.3	175.5	39.06	93.34
8	CCRU Reformer Heater-201, 202,203 FF	22-06-2020	5.3	0.3	2.4	121.7	9.18	66.88
9	CCRU NHT Heater-FF 204	22-06-2020	7.1	0.8	3.7	173.5	19.24	92.20
10	CCRU Reformer Heater-FF 205	22-06-2020	5.4	0.3	3.2	146.6	16.28	76.03
Permissible Limits (mg/Nm ³)		Gas	50			500		
		Liquid	5700			400		
Test Method			SOP No.: NL/ SOP / PQA.01			USEPA, CDM-34		

End of the Report



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Naptha Cracker, Haryana, INDIA	Test Report No	20090180110-121
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	IS: 11255 (Part I)
Sampling Conducted By	Seetha Kumar	Test Started On	06/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	HRSG-1	18-06-2020	70	3.3	34	168	9.55
2	HRSG-2	18-06-2020	70	3.3	34	168	9.00
3	HRSG-3	18-06-2020	70	3.3	34	166	11.70
4	HRSG-4	20-06-2020	70	3.3	33	162	12.51
5	HRSG-5	20-06-2020	70	3.3	34	175	10.43
6	UB-02	18-06-2020	100	0.96	29	138	10.33
7	CRP VHP-1	18-06-2020	100	2.34	35	133	0.81
8	CCRU Reformer Heater-201, 202,203 FF	22-06-2020	60	1.66	36	281	11.96
9	CCRU NHT Heater-FF 204	22-06-2020	70	2.34	36	175	10.76
10	CCRU Reformer Heater-FF 205	22-06-2020	70	2.34	30	145	10.05

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)			Nickel & Vanadium (as Ni & V)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	HRSG-1	18-06-2020	5.0	1.11	4.89	ND	-	-
2	HRSG-2	18-06-2020	5.9	0.79	3.40	ND	-	-
3	HRSG-3	18-06-2020	4.9	1.23	4.26	ND	-	-
4	HRSG-4	20-06-2020	5.8	1.46	4.88	ND	-	-
5	HRSG-5	20-06-2020	7.4	1.39	6.48	ND	-	-
6	UB-02	18-06-2020	6.2	15.90	6.54	ND	-	-
7	CRP/VHP-1	18-06-2020	2.6	1.05	5.03	ND	-	-
8	CCRU Reformer Heater-201, 202,203 FF	22-06-2020	6.2	0.21	3.67	ND	-	-
9	CCRU NHT Heater-FF 204	22-06-2020	14.6	1.62	12.74	ND	-	-
10	CCRU Reformer Heater-FF 205	22-06-2020	12.5	1.39	10.91	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	150			-		
		Liquid	250			5		
Test Method			USEPA OTH-20			IS:11255		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division)	ULR No	TC14814260002363F, 2385F- 2347F, 2399F-2362F, 2495F- 2452F
Sample Description	Paripat Refinery, Haryana, INDIA	Test Report Date	11/01/2026
Date of Sample Received	Flue Gas Monitoring	Method of Sampling	IS: 11265 (Part 7)
Sampling Conducted By	06/07/2025	Test Started On	06/07/2025
	Sachin Kumar	Test Completed On	10/07/2025

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
11	DHCU LP Section	23-06-2025	55	2.42	30	138	10.99
12	DHCU RG Heater	23-06-2025	52	2.42	30	179	10.91
13	RFCC Boiler	19-06-2025	100	8.85	33	171	10.08
14	DCU Heater	24-06-2025	70	3	37	154	8.84
15	DHDS	23-06-2025	70	1.3	37	223	10.64
16	DHDT H-01	24-06-2025	70	1.8	36	201	11.00
17	DHDT H-02	24-06-2025	70	1.8	36	206	10.65
18	AVU-2	26-06-2025	100	5.1	43	170	10.18
19	HCU 77	26-06-2025	60	1.7	35	131	10.52
20	HCU 78	26-06-2025	60	1.4	33	123	10.19

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matter (as PM)	
			mg/m ³	kg/hr
11	DHCU LP Section	23-06-2025	6.9	0.6
12	DHCU RG Heater	23-06-2025	6.5	1.0
13	RFCC Boiler	19-06-2025	5.4	1.8
14	DCU Heater	24-06-2025	7.5	0.2
15	DHDS	23-06-2025	4.1	0.3
16	DHDT H-01	24-06-2025	3.8	0.2
17	DHDT H-02	24-06-2025	6.5	4.3
18	AVU-2	26-06-2025	7.6	1.9
19	HCU 77	26-06-2025	7.9	2.0
20	HCU 78	26-06-2025	6.4	0.5
Permissible Limits (mg/Wm ³)		Gas	10	
		Liquid	100	
Test Method			IS: 11265 (P-1)	

End of the Report



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat, Napha Crocker, Haryana, INDIA	Test Report No	202005100123-101
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	ID 11205 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
11	OHCU LP Section	23-06-2020	60	2.42	36	136	10.58
12	OHCU RG Header	23-06-2020	60	2.42	36	136	10.51
13	RFCC Boiler	19-06-2020	160	9.85	33	171	10.00
14	DCU Header	24-06-2020	70	3	37	164	9.54
15	DHDS	23-06-2020	70	1.3	37	223	10.84
16	DHDT H-01	24-06-2020	70	1.8	38	201	11.39
17	DHDT H-02	24-06-2020	70	1.8	38	206	10.90
18	AVU-2	26-06-2020	160	5.1	43	170	10.18
19	HGU 7F	26-06-2020	60	1.7	35	131	10.52
20	HGU 7E	26-06-2020	60	1.4	33	123	10.19

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
11	OHCU LP Section	23-06-2020	6.5	0.8	2.3	136.8	17.46	72.71
12	OHCU RG Header	23-06-2020	4.9	0.3	1.7	131.8	15.13	70.05
13	RFCC Boiler	19-06-2020	11.7	1.5	3.1	165.9	18.18	81.42
14	DCU Header	24-06-2020	12.7	2.2	4.8	115.5	18.63	61.50
15	DHDS	23-06-2020	10.8	0.3	4.0	125.6	3.55	88.76
16	DHDT H-01	24-06-2020	9.2	0.8	3.1	136.8	8.74	72.71
17	DHDT H-02	24-06-2020	7.9	0.5	3.0	141.5	6.59	76.21
18	AVU-2	26-06-2020	ND(DL-5)	0.0	0.0	209	103.32	108.08
19	HGU 7F	26-06-2020	ND(DL-5)	0.0	0.0	ND(DL-5)	0.00	0.00
20	HGU 7E	26-06-2020	ND(DL-5)	0.0	0.0	ND(DL-5)	0.00	0.00
Permissible Limits (mg/Nm ³)			Gas	50		360		
			Liquid	1700		450		
Test Method			SOP No. / ML / SOP / ISG 4/91			USEPA OTM-39		

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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naptha Cracker, Haryana, INDIA	Test Report No	202608160123-131
Sample Description	Flue Gas Monitoring	Test Report Date	15/07/2026
Date of Sample Received	06/07/2026	Method of Sampling	IS: 11256 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2026
		Test Completed On	06/07/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
11	CHCU LP Section	23-06-2026	85	2.42	36	136	10.59
12	CHCU RG Heater	23-06-2026	83	2.42	36	179	12.51
13	RFCC Boiler	19-06-2026	100	3.89	33	171	10.08
14	DCU Heater	24-06-2026	75	3	37	154	9.54
15	DHDS	23-06-2026	75	1.3	37	223	10.84
16	DHDT H-01	24-06-2026	75	1.8	36	201	11.09
17	DHDT H-02	24-06-2026	75	1.8	38	206	10.55
18	AVU-2	25-06-2026	160	8.1	43	170	10.18
19	HGU 77	25-06-2026	60	1.7	38	151	10.52
20	HGU 76	25-06-2026	60	1.4	33	129	10.15

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)			Nickel & Vanadium (as Ni & V)*		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
11	CHCU LP Section	23-06-2026	3.8	0.50	3.40	ND	-	-
12	CHCU RG Heater	23-06-2026	12.8	1.47	11.17	ND	-	-
13	RFCC Boiler	19-06-2026	23.8	3.14	17.65	ND	-	-
14	DCU Heater	24-06-2026	15.3	3.34	13.27	ND	-	-
15	DHDS	23-06-2026	11.8	0.33	10.13	ND	-	-
16	DHDT H-01	24-06-2026	8.8	0.44	6.03	ND	-	-
17	DHDT H-02	24-06-2026	18.9	1.15	16.55	ND	-	-
18	AVU-2	25-06-2026	ND(DL-0.1)	0.00	0.00	ND	-	-
19	HGU 77	25-06-2026	7.0	1.79	6.11	ND	-	-
20	HGU 76	25-06-2026	8.0	2.26	7.86	ND	-	-
Permissible Limits (mg/Nm ³)		Gas	160			-		
		Liquid	260			5		
Test Method			USEPA QTM-38			IS: 13276		



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Test Report

Issued To : **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Haryana, INDIA

Sample Description : **Flue Gas Monitoring**
Date of Sample Received : **05/07/2026**
Sampling Conducted By : **Sachin Kumar**

ULR No : **TC146142000002009F-2009F, 2009F,
2408F-2408F, 2413F-2413F**
Test Report Date : **11/07/2026**
Method of Sampling : **IS: 11288 (Part 7)**
Test Started On : **06/07/2026**
Test Completed On : **10/07/2026**

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
21	HGU-PDS	25-06-2026	60	1.7	42	189	10.65
22	PTA/RCU	19-06-2026	70	1.3	32	186	11.27
23	MSQ Prime G-301-H-101	25-06-2026	60	1.04	30	188	10.35
24	MSQ Prime G-301-H-201	25-06-2026	60	1.04	30	187	10.68
25	MSQ Prime G-301-H-301	25-06-2026	60	1.04	36	206	12.51
26	DHDT BS VI (New-107)	24-06-2026	70	1.8	38	196	10.49
27	HGU-BS-VI (New-108)	24-06-2026	66.7	3.4	30	271	11.69
28	PTA/FCRH	19-06-2026	60	2.20	34	204	10.30
29	PTA/Hot Oil Heater	19-06-2026	60	2.20	34	189	9.89
30	FWCCR	25-06-2026	100	1.9	35	240	11.32

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)	
			mg/Nm ³	Kg/hr
21	HGU-PDS	25-06-2026	5.4	0.5
22	PTA/RCU	19-06-2026	5.5	0.2
23	MSQ Prime G-301-H-101	25-06-2026	4.3	0.2
24	MSQ Prime G-301-H-201	25-06-2026	3.8	0.2
25	MSQ Prime G-301-H-301	25-06-2026	4.1	0.2
26	DHDT BS VI (New-107)	24-06-2026	5.3	0.3
27	HGU-BS-VI (New-108)	25-06-2026	2.0	0.9
28	PTA/FCRH	19-06-2026	5.1	0.8
29	PTA/Hot Oil Heater	19-06-2026	5.1	0.9
30	FWCCR	25-06-2026	6.9	0.5
Permissible Limits (mg/Nm ³)		Gas	10	
		Liquid	100	
Test Method			IS:11288 (P-1)	

End of the Report



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Pongol Naptha Cracker, Haryana, INDIA	Test Report No	20288180132-141
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	IS: 11295 (Part I)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
21	HCU-PDS	26-06-2020	60	1.7	42	189	10.65
22	PTA/HCU	19-06-2020	70	1.3	33	186	11.27
23	MSQ Prime G-301-H-101	25-06-2020	60	1.54	36	189	10.39
24	MSQ Prime G-301-H-201	25-06-2020	60	1.54	36	187	10.68
25	MSQ Prime G-301-H-301	25-06-2020	60	1.54	36	308	12.51
26	DHOT 85-VI (New -107)	24-06-2020	70	1.8	38	196	10.40
27	HCU-85-VI (New -106)	26-06-2020	50.7	2.4	38	271	11.83
28	PTA/FCPH	19-06-2020	60	2.35	34	304	10.26
29	PTA/for Oil Heater	19-06-2020	60	2.35	34	189	9.66
30	PXCCR	29-06-2020	100	1.9	38	243	11.32

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/Nm ³	kg/hr	PPM	mg/Nm ³	kg/hr	PPM
21	HCU-PDS	26-06-2020	ND(DL-5)	0.0	0.0	86.8	5.28	47.62
22	PTA/HCU	19-06-2020	5.6	0.2	2.1	127.8	4.46	87.82
23	MSQ Prime G-301-H-101	25-06-2020	11.7	0.0	4.5	154.2	8.23	81.98
24	MSQ Prime G-301-H-201	25-06-2020	12.8	0.7	4.8	141.8	7.43	75.26
25	MSQ Prime G-301-H-301	25-06-2020	9.4	3.5	3.6	130.9	8.81	88.58
26	DHOT 85-VI (New -107)	24-06-2020	13.7	3.8	5.2	114.6	8.99	90.91
27	HCU-85-VI (New -106)	26-06-2020	6.4	1.2	2.1	86.5	10.65	45.67
28	PTA/FCPH	19-06-2020	6.9	0.7	2.6	66.5	4.42	23.65
29	PTA/for Oil Heater	19-06-2020	4.8	0.5	1.8	119.6	12.34	63.04
30	PXCCR	29-06-2020	6.3	0.4	2.4	224	14.93	119.08
Permissible Limits (mg/Nm ³)		Gas	50			360		
		Liquid	1700			450		
Test Method			SOP No.: NI/ SOP / FGA, 01			USCPA, OTM-20		

End of the Report



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Paripat Naptha Cooler, Haryana, India	Test Report No	202006180102-143
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	IS: 11255 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	08/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
21	HGU-PDS	29-06-2020	66	1.7	42	169	10.85
22	PTAHCU	19-06-2020	73	1.3	33	180	11.27
23	MSG Prime G-301-R-101	29-06-2020	80	1.64	36	188	10.39
24	MSG Prime G-301-R-201	29-06-2020	80	1.64	36	187	10.68
25	MSG Prime G-301-H-301	29-06-2020	86	1.64	36	200	12.51
26	CHDT BS VI (New -107)	24-06-2020	78	1.8	38	198	10.48
27	HGU-SS-VI (New -108)	26-06-2020	10.7	3.4	36	271	11.88
28	PTAHCPH	19-06-2020	81	2.35	34	204	10.38
29	PTAHCU Heater	19-06-2020	60	2.35	34	160	9.68
30	PXCCR	29-06-2020	100	1.9	38	243	11.32

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)			Nickel & Vanadium (as Ni & V)		
			mg/M ³	kg/hr	PPM	mg/M ³	kg/hr	PPM
21	HGU-PDS	29-06-2020	ND(DL-0.1)	0.00	0.03	ND	-	-
22	PTAHCU	19-06-2020	5.2	6.18	4.54	ND	-	-
23	MSG Prime G-301-R-101	29-06-2020	11.8	9.93	10.35	ND	-	-
24	MSG Prime G-301-R-201	29-06-2020	9.8	8.21	8.38	ND	-	-
25	MSG Prime G-301-H-301	29-06-2020	6.4	5.41	7.33	ND	-	-
26	CHDT BS VI (New-107)	24-06-2020	7.6	6.46	6.63	ND	-	-
27	HGU-SS-VI (New-108)	26-06-2020	7.1	1.53	6.20	ND	-	-
28	PTAHCPH	19-06-2020	ND(DL-0.1)	0.00	0.00	ND	-	-
29	PTAHCU Heater	19-06-2020	ND(DL-0.1)	0.00	0.00	ND	-	-
30	PXCCR	29-06-2020	ND(DL-0.1)	0.00	0.00	ND	-	-
Permissible Limits (mg/M ³)		Gas	100			-		
		Liquid	200			5		
Test Method			USEPA QTM-36			IS-13278		



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Haryana, INDIA	ULR No	TC148142600032431F, 2441F
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2026
Date of Sample Received	06/07/2026	Method of Sampling	IS-11265 (Part I)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2026
		Test Completed On	10/07/2026

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
31	PX NHT	29-06-2026	35	1	31	267	11.95
32	PX Isomer	27-06-2026	58	1.2	42	183	11.25
33	PX Tatory	27-06-2026	50	1.2	43	179	11.26
34	PX-Xylene	27-06-2026	78	2	40	216	12.02
35	SSU Heater	30-06-2026	75	0.85	43	171	10.61

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Particulate Matters (as PM)	
			mg/Nm ³	Kg/hr
31	PX NHT	29-06-2026	7.4	0.1
32	PX Isomer	27-06-2026	6.8	0.2
33	PX Tatory	27-06-2026	6.6	0.2
34	PX-Xylene	27-06-2026	4.8	0.4
35	SSU Heater	30-06-2026	7.2	0.1
Permissible Limit (mg/Nm ³)		Gas	18	
		Liquid	100	
Test Method			IS-11265 (P-I)	

End of the Report



TC-14814



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Naphtha Cracker, Haryana, INDIA	Test Report No	20200180142-146
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	09/07/2020	Method of Sampling	IS- 11255 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	09/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
31	FX INBT	29-06-2020	50	1	31	267	11.55
32	FX Isomer	27-06-2020	56	1.2	43	193	11.25
33	FX Tatory	27-06-2020	56	1.2	43	179	11.28
34	FX Xylene	27-06-2020	70	2	40	218	12.02
35	BDU Heater	30-06-2020	70	0.85	43	171	10.81

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)		
			mg/m ³	Kg/hr	PPM	mg/m ³	Kg/hr	PPM
31	FX INBT	29-06-2020	4.9	0.1	1.9	254	6.74	120.01
32	FX Isomer	27-06-2020	10.8	0.3	4.1	132.6	3.66	70.40
33	FX Tatory	27-06-2020	7.3	0.2	2.7	60.5	2.56	32.35
34	FX Xylene	27-06-2020	11.6	1.0	4.4	194.5	8.79	36.81
35	BDU Heater	30-06-2020	40	0.0	0.0	206	3.00	300.40
Permissible Limits (mg/m ³)		Gas	50			360		
		Liquid	1700			480		
Test Method			SOP No.: NU SOP / FGA /01			USEPA / STM-35		

End of the Report

(AUTHORIZED SIGNATORY)
RANINDER MITAL

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Test Report

Issued To

M/s Indian Oil Corporation Limited
(Refinery Division)
Pampet Naphta Cracker, Haryana, INDIA
Flare Gas Monitoring
06/07/2026
Sachin Kumar

Test Report No : 302666180142-146
Test Report Date : 11/07/2026
Method of Sampling : IS: 11255 (Part 7)
Test Started On : 06/07/2026
Test Completed On : 10/07/2026

Sample Description

Date of Sample Received

Sampling Conducted By

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
31	PX NHT	29-06-2026	38	1	31	267	11.90
32	PX Isomer	27-06-2026	50	1.2	42	193	11.25
33	PX Tatory	27-06-2026	56	1.2	43	179	11.28
34	PX-Xylene	27-06-2026	78	2	40	218	12.02
35	BBU Heater	30-06-2026	70	0.85	43	171	10.61

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Carbon Monoxide (as CO)			Nickel & Vanadium (as Ni & V)		
			mg/Nm ³	kg/hr	PPM	mg/Nm ³	kg/hr	PPM
31	PX NHT	29-06-2026	4	0.07	3.43	ND	-	-
32	PX Isomer	27-06-2026	13.8	0.40	12.05	ND	-	-
33	PX Tatory	27-06-2026	ND(DL=0.1)	-	-	ND	-	-
34	PX-Xylene	27-06-2026	ND(DL=0.1)	-	-	ND	-	-
35	BBU Heater	30-06-2026	10	0.16	0.72	ND	-	-
Permissible Limits (mg/Nm ³)			Gas			-		
			Liquid			-		
Test Method			USEPA OTM-28			IS:13279		

(AUTHORISED SIGNATORY)
(SACHIN KUMAR)

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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Ranipal Naphtha Cracker, Haryana, INDIA	ULR No	TC-14814260000443F-2444F
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2026
Date of Sample Received	08/07/2026	Method of Sampling	IS-11255 (Part 1)
Sampling Conducted By	Sashin Kumar	Test Started On	09/07/2026
		Test Completed On	10/07/2026

Stack Detail

St. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
54	SRU-28	30-06-2026	70	1.0	42	175	11.24
55	SRU-57	30-06-2026	78	1.3	42	182	11.80

Test Result

St. No.	Stack Particulars	Date of Sampling	Hydrogen Sulphide (as H ₂ S)		
			mg/Nm ³	pphm	PPM
54	SRU-28	30-06-2026	ND[DL-0.1]	-	-
55	SRU-57	30-06-2026	ND[DL-0.1]	-	-
Permissible Limits (mg/Nm ³)			-		
Test Method			IS-11356 (P-4)		



TC-14814



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Test Report

Issued To	Ms Indian Oil Corporation Limited (Refinery Division) Ferozpur Refinery, Haryana, INDIA	Test Report No	202006100147-148
Sample Description	Flue Gas Monitoring	Test Report Date	11/07/2020
Date of Sample Received	06/07/2020	Method of Sampling	IS: 11285 (Part 7)
Sampling Conducted By	Sachin Kumar	Test Started On	06/07/2020
		Test Completed On	10/07/2020

Stack Detail

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (mtr.)	Stack Dia. (mtr.)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)
1	SRU-26	30-06-2020	70	1.8	43	175	11.36
2	SRU-57	30-06-2020	70	1.8	42	162	11.90

Test Result

Sr. No.	Stack Particulars	Date of Sampling	Sulphur Dioxide (as SO ₂)			Nitrogen Dioxide (as NO ₂)			Carbon Monoxide (as CO)		
			mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
1	SRU-26	30-06-2020	ND[DL-6]	-	-	88.7	5.32	37.05	48.7	3.56	40.75
2	SRU-57	30-06-2020	ND[DL-5]	-	-	58.6	4.53	31.15	36.9	2.91	32.21
Permissible Limits (mg/Nm ³)			-			180			100		
Test Method			SOP No.: NL/ SOP / FGA /01			USEPA OTM-20			USEPA OTM-20		

(AUTHORISED SIGNATORY)
RAVINDER MITTAL

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Test Report

Issued To **M/s Indian Oil Corporation Limited** **ULR No.** **TC 14814260000426F**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA **Test Report Date** **05/02/2026**

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : **1.0 Litre. Pet Bottle**
Sample Received at Lab : **30/01/2026**
Test Started on : **30/01/2026**
Test Completed : **05/02/2026**
Method of Sampling : **SOP/6/D-3**
Date of Sampling : **28/01/2026**
Sampling Conducted By : **Mr. Rishi Pal**
Sample Description : **ETP-1 Guard Pond**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.64	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	100	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.6	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3.2	5.0	IS:3025 (P-38)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.24	0.35	IS:3025 (P-42)
7	Sulphide (S)	mg/L	0.18	0.5	IS:3025 (P-20)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	6.2	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.20	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.34	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

Remark:

ND-Not Detected; DL-Limit of Quantification; the lowest concentration at which that can be accurately measured under specified conditions.



TC-14814



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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No: 202601280110
Test Report Date: 06/02/2026

Sample Particulars

Nature of Sample: Waste Water
Sample Quantity & Packaging: 1.0 Litre, Pet Bottle
Sample Received at Lab: 30/01/2026
Test Started on: 30/01/2025
Test Completed: 05/02/2026
Method of Sampling: SOP/B/D-3
Date of Sampling: 28/01/2026
Sampling Conducted By: Mr. Rishi Pal
Sample Description: ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	4.6	15.0	IS 3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS 3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remark:

ND=Not Detected, DL=Limit of Quantification, The lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No. TC-146142900000427F

Test Report Date 06/02/2026

Sample Particulars

Nature of Sample : Waste Water

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle

Test Started on : 30/01/2026

Test Completed : 06/02/2026

Method of Sampling : SOP/B-D-3

Date of Sampling : 28/01/2026

Sampling Conducted By : Mr. Rishi Pal

Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.84	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	10	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	80	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	7.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2.2	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.21	0.38	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.20	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.21	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA 23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	2.14	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

Remarks: ND=Not Detected, DL=Limit of Quantitation, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



TC-14614



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

Test Report No.: 202601260111

Test Report Date: 06/02/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 30/01/2026
Test Completed : 06/02/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 28/01/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	2.8	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed

Remarks:

ND:Not Detected, DL:Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

ULR No.: TC14814260000466F

Test Report Date: 07/02/2026

Sample Particulars

Nature of Sample: Waste Water
Sample Quantity & Packaging: 1.0 Liter, Pet Bottle
Test Started on: 31/01/2026
Test Completed: 06/02/2026
Method of Sampling: SOP/B/D-3
Date of Sampling: 29/01/2026
Sampling Conducted By: Nitya Laboratories
Sample Description: ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.96	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	86	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	150	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	25	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.60	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.4	2.0	IS:3025 (P-26)
7	Fluoride	mg/L	2.90	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remark:
ND-Not Detected(DL-Detection Limit)



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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202512270112

Test Report Date: 07/02/2026

Sample Particulars

Nature of Sample	:	Waste Water
Sample Quantity & Packaging	:	1.0 Liter, Pet Bottle
Test Started on	:	31/01/2026
Test Completed	:	06/02/2026
Method of Sampling	:	SOP/B/D-3
Date of Sampling	:	29/01/2026
Sampling Conducted By	:	Nitya Laboratories
Sample Description	:	ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed
2	Total Chromium	mg/L	ND	2.0	IS 3025 (P-52)

Remark:

ND-NDL Detected/DL-Detection Limit



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No.: TC148142600000830F

Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Litre, Pet Bottle
Sample Received at Lab : 26/02/2026
Test Started on : 26/02/2026
Test Completed : 04/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 24/02/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	--	7.78	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	13	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2	5.0	IS:3025 (P-39)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.14	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	4.48	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.02	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed.
14	Zinc (Zn)	mg/L	0.46	5.0	APHA 24th Ed.
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed.

Remark:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration or quantity that can be accurately measured under specified experimental conditions.



TC-14814



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No.: 202602240110

Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : 1.0 Litre, Pet Bottle
Sample Received at Lab : 26/02/2026
Test Started on : 26/02/2026
Test Completed : 04/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 24/02/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	3.10	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remark:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No.: TC148142600000631F

Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 26/02/2026
Test Completed : 04/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 24/02/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.89	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	70	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	13	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.10	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.42	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.64	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

Remark: ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued To **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No.: 202602240111

Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 26/02/2026
Test Completed : 04/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 24/02/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	2.02	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS.3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remark:

ND-NM (Detected), DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Dist. Panipath, Haryana, INDIA

ULR No.: TC14814260000964E

Test Report Date: 05/03/2008

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	26/02/2026
Test Completed	04/03/2026
Method of Sampling	SOP/B/D-3
Date of Sampling	24/02/2026
Sampling Conducted By	Nitya Laboratories
Sample Description	ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.84	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	92	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	180	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	27	30	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.52	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	2.50	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remark:

Remark: N_0 Not Detected's Detection Limit



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Dist. Panipath, Haryana, INDIA

Test Report No. 202802240112

Test Report Date 05/03/2026

Sample Particulars

Nature of Sample
Sample Quantity & Packaging
Test Started on
Test Completed
Method of Sampling
Date of Sampling
Sampling Conducted By
Sample Description

Waste Water
1.0 Liter, Pat Bottle
26/02/2026
04/03/2026
SOP/B/D-3
24/02/2026
Nitya Laboratories
ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)

Remark:

ND-Not Detected/DL-Detection Limit



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No.: TC146142600001047F

Test Report Date: 28/03/2026

Sample Particulars

Nature of Sample : Waste Water

Sample Quantity & Packaging : 1.0 Litre, Pet Bottle

Sample Received at Lab : 21/03/2026

Test Started on : 21/03/2026

Test Completed : 27/03/2026

Method of Sampling : SOP/B/D-3

Date of Sampling : 16/03/2026

Sampling Conducted By : Mr. Rishi Pal

Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.58	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	70	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12	15.0	IS:3025 (P-64)
5	Oil & Grease (O&G)	mg/L	ND	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.10	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	3.38	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.94	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.32	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

Remarks:

ND-Not Detected, DL-Limit of Quantification, the stated concentration of a substance, that can be accurately measured under specified experimental conditions.



TC-14814

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No. 202603160110
Test Report Date 28/03/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Litre. Pet Bottle
Sample Received at Lab : 21/03/2026
Test Started on : 21/03/2026
Test Completed : 27/03/2026
Method of Sampling : SOP/8/D-3
Date of Sampling : 16/03/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	2.80	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remark

ND=Not Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No.: TC148142600001048F
Test Report Date: 26/03/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 21/03/2026
Test Completed : 27/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 16/03/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.93	6.0-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	12	20.0	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	60	125.0	IS 3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	11	15.0	IS 3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2	5.0	IS 3025 (P-39)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.16	0.35	IS 3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS 3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	0.84	40	IS 3025 (P-34)
9	Phosphate	mg/L	0.56	3.0	IS 3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS 3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed.
14	Zinc (Zn)	mg/L	0.52	5.0	APHA 24th Ed.
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed.

Remark:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

Test Report No. 202603160111

Test Report Date: 26/03/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 21/03/2026
Test Completed : 27/03/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 18/03/2026
Sampling Conducted By : Mr. Rishi Pal
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	0.52	15.0	IS-3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS-3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remarks:

ND=Not Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.


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Test Report

Issued To **M/s Indian Oil Corporation Limited** ULR No.: **TC148142600001054F**
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA
Test Report Date: **28/03/2025**

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : **1.0 Liter, Pet Bottle**
Test Started on : **21/03/2025**
Test Completed : **27/03/2025**
Method of Sampling : **SOP/B/D-3**
Date of Sampling : **16/03/2025**
Sampling Conducted By : **Nitya Laboratories**
Sample Description : **ETP-3 Guard Pond 3**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.68	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	64	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	150	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	25	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.70	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.0	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	2.90	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remarks:

ND-Not DetectedDL-Detection Limit



TC-14814



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Test Report

Issued To **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202603160112

Test Report Date: 28/03/2026

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	21/03/2026
Test Completed	27/03/2026
Method of Sampling	SOP/B/D-3
Date of Sampling	16/03/2026
Sampling Conducted By	Nitya Laboratories
Sample Description	ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)

Remark:

ND=Not Detected(DL=Detection Limit)



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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No TC 14814360001570E

Test Report Date: 28/04/2008

Sample Particulars

Nature of Sample	1	Waste Water
Sample Quantity & Packaging	2	1.0 Litre, Pet Bottle
Sample Received at Lab	3	21/04/2026
Test Started on	4	21/04/2026
Test Completed	5	27/04/2026
Method of Sampling	6	SOP/BO-3
Date of Sampling	7	17/04/2026
Sampling Conducted By	8	Mr. Sachin Kumar
Sample Description	9	ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.58	6.0-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18	20.0	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	80	125.0	IS 3025 (P-68)
4	5dc-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	14	15.0	IS 3025 (P-44)
5	Oil & Grease (O&G)	mg/L	ND	5.0	IS 3025 (P-39)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.12	0.38	IS 3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS 3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	3.14	40	IS 3025 (P-34)
9	Phosphate	mg/L	0.78	3.0	IS 3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS 3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.44	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist: Panipat
Haryana, INDIA

Test Report No. 20230417D110
Test Report Date: 28/04/2023

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Litre, Pet Bottle
Sample Received at Lab : 21/04/2023
Test Started on : 21/04/2023
Test Completed : 27/04/2023
Method of Sampling : SOP/8/D-3
Date of Sampling : 17/04/2023
Sampling Conducted By : Mr. Sachin Kumar
Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	2.58	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

ND=Not Detected. DL=Limits of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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TIME REPORT

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

ULR No: TC148142600001571F

Test Report Date: 28/04/2025

Special Participants

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	21/04/2026
Test Completed	27/04/2026
Method of Sampling	SOP/6/D-3
Date of Sampling	17/04/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.66	6.0-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14	20.0	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	70	125.0	IS 3025 (P-55)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12	15.0	IS 3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3	5.0	IS 3025 (P-39)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.10	0.36	IS 3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS 3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	0.68	40	IS 3025 (P-34)
9	Phosphate	mg/L	0.79	3.0	IS 3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS 3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA - 23rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.44	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

100

^aLO-REL (Lower Limit of Reliability) is the lowest concentration of a substance that can be reliably measured under specified experimental conditions.[illegible]

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

Test Report No. 202804170111

Test Report Date 28/04/2028

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 21/04/2028
Test Completed : 27/04/2028
Method of Sampling : SOP/BD-3
Date of Sampling : 17/04/2028
Sampling Conducted By : Mr. Sachin Kumar
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	0.85	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Notes:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.


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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Naphtha Cracker Dist. Panipat, Haryana, INDIA
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ULR No. TC148143900001577F

Test Report Date: 28/04/2006

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on:

Test Completed

Method of Sampling

Date of Sampling: _____

Sampling Conducted By:

Sample Description

Information Warfare

1.0 Liter Pet Bottle

21045094

STUDY DESIGN

SOP1810-3

1744-2020

Mr. Sachin Kumar

ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.45	6.5-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	58	100	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	160	250	IS 3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	28	30	IS 3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.45	<1	IS 3025 (P-43)
9	Sulphide (S)	mg/L	0.84	2.0	IS 3025 (P-26)
7	Fluoride	mg/L	3.36	<5	IS 3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS 3025 (P-52)

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Paripat Refinery, Naptha Cracker
Dist. Paripath, Haryana, INDIA

Test Report No.: 202504170112

Test Report Date: 26/04/2026

Sample Particulars

Nature of Sample	: Waste Water
Sample Quantity & Packaging	: 1.0 Liter, Pet Bottle
Test Started on	: 21/04/2026
Test Completed	: 27/04/2026
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 17/04/2026
Sampling Conducted By	: Mr. Sachin Kumar
Sample Description	: ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS-3025 (P-52)

Remarks:

ND=Not Detected(DL=Detection Limit)


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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

LIR No.: TC148142600001838F

Test Report Date: 19/05/2026

Sample Particulars

Nature of Sample : **Waste Water**

Sample Quantity & Packaging : **1.0 Litre, Pet Bottle**

Sample Received at Lab : **12/05/2026**

Test Started on : **12/05/2026**

Test Completed : **18/05/2026**

Method of Sampling : **SOP/B/D-3**

Date of Sampling : **08/05/2026**

Sampling Conducted By : **Mr. Sachin Kumar**

Sample Description : **ETP-1 Guard Pond**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	--	7.66	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	70	125.0	IS:3025 (P-56)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	13	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2	5.0	IS:3025 (P-38)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.27	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	4.48	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.88	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed.
14	Zinc (Zn)	mg/L	0.36	5.0	APHA 24th Ed.
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed.

Notes:

ND=Not Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



TC-14814

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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

Test Report No.: 202805160110
Test Report Date: 19/05/2026

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Litre, Pet Bottle
Sample Received at Lab	12/05/2026
Test Started on	12/05/2026
Test Completed	16/05/2026
Method of Sampling	SOP/B/D-3
Date of Sampling	08/05/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	3.18	15.0	IS 3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS 3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

Remark:

ND=Not Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To **M/s Indian Oil Corporation Limited** ULR No. **TC149142600001939F**
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA
Test Report Date: **19/05/2026**

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : **1.0 Liter, Pet Bottle**
Test Started on : **12/05/2026**
Test Completed : **18/05/2026**
Method of Sampling : **SOP/B/D-3**
Date of Sampling : **08/05/2026**
Sampling Conducted By : **Mr. Sachin Kumar**
Sample Description : **ETP-2 Guard Pond**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.95	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	64	125.0	IS:3025 (P-56)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	11	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2	5.0	IS:3025 (P-36)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.18	0.35	IS:3025 (P-43)
7	Sulphide (H ₂ S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	2.24	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.88	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed.
14	Zinc (Zn)	mg/L	0.35	5.0	APHA 24th Ed.
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed.

Remark:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Dist. Panipat
Haryana, INDIA

Test Report No.: 202605080111

Test Report Date: 19/05/2026

Sample Particulars

Nature of Sample: Waste Water
Sample Quantity & Packaging: 1.0 Liter, Pet Bottle
Test Started on: 12/05/2026
Test Completed: 18/05/2026
Method of Sampling: SOP/8/D-3
Date of Sampling: 08/05/2026
Sampling Conducted By: Mr. Sachin Kumar
Sample Description: ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (NH ₃)	mg/L	1.97	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

DL=ND

ND=Not Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

issued To **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Naptha Cracker
Dist. Panipath, Haryana, INDIA

ULR No. TC148142800001950F

Test Report Date: 19/05/2025

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	12/05/2026
Test Completed	18/05/2026
Method of Sampling	SOP/B/D-3
Date of Sampling	08/05/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	ETP-3 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.57	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	46	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	150	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	27	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.38	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS:3025 (P-39)
7	Fluoride	mg/L	3.08	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ^{VI})	mg/L	ND	0.1	IS:3025 (P-52)

Table 1

DOI: 10.1002/for



TC-14544

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(RAVINDER MITTAL)

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202606080122
Test Report Date: 18/05/2026

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : **1.0 Liter, Pet Bottle**
Test Started on : **12/05/2026**
Test Completed : **18/05/2026**
Method of Sampling : **SOP/B/D-3**
Date of Sampling : **08/05/2026**
Sampling Conducted By : **Mr. Sachin Kumar**
Sample Description : **ETP-3 Guard Pond 3**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-24th Ed.
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)

Remarks:

ND-Not Detected/DL-Detection Limit

(AUTHORISED SIGNATORY)
E. A. Mittal
(RAVINDER MITTAL)

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No. TC148142800002407F

Test Report Date: 07/07/2026

Sample Particulars

Nature of Sample : Waste Water

Sample Quantity & Packaging : 1.0 Litre, Pet Bottle

Sample Received at Lab : 30/06/2026

Test Started on : 30/06/2026

Test Completed : 06/07/2026

Method of Sampling : SOP/S/O-3

Date of Sampling : 25/06/2026

Sampling Conducted By : Mr. Sachin Kumar

Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.53	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	64	125.0	IS:3025 (P-56)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	ND	5.0	IS:3025 (P-36)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.20	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	3.36	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.72	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed.
14	Zinc (Zn)	mg/L	0.28	5.0	APHA 24th Ed.
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed.

REMARK:

ND-Not Detected, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



TC-14814



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BUILDING & ROAD, MATERIAL, SOIL & ENVIRONMENTAL TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No.: 202808250110
Test Report Date: 07/07/2026

Sample Particulars:

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Litre, Pet Bottle
Sample Received at Lab : 30/06/2026
Test Started on : 30/06/2026
Test Completed : 06/07/2026
Method of Sampling : SOP/B/D-3
Date of Sampling : 25/06/2026
Sampling Conducted By : Mr. Sachin Kumar
Sample Description : ETP-1 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	2.80	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed.
6	Benzo(a)-Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed.

ND=Not

Detected, DL=Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

ULR No.: TC148142600002408F

Test Report Date: 07/07/2026

Sample Particulars

Nature of Sample : **Waste Water**

Sample Quantity & Packaging : 1.0 Liter. Pet Bottle

Test Started on : 30/06/2026

Test Completed : 08/07/2026

Method of Sampling : SOP/BI-D-3

Date of Sampling : 25/06/2026

Sampling Conducted By : Mr. Sachin Kumar

Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.84	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	ND	5.0	IS:3025 (P-39)
6	Phenols (C ₆ H ₅ OH)	mg/L	0.24	0.35	IS:3025 (P-43)
7	Sulphide (H ₂ S)	mg/L	ND	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	5.04	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.94	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-62)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	ND	0.1	APHA 24th Ed
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA 24th Ed
14	Zinc (Zn)	mg/L	0.23	5.0	APHA 24th Ed
15	Nickel (Ni)	mg/L	ND	1.0	APHA 24th Ed

ND=Not Detected

DL=Limit of Quantification: the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

Test Report No.: 202606250111
Test Report Date: 07/07/2026

Sample Particulars

Nature of Sample : Waste Water
Sample Quantity & Packaging : 1.0 Liter; Pet Bottle
Test Started on : 30/06/2026
Test Completed : 06/07/2026
Method of Sampling : SOP/B/O-3
Date of Sampling : 25/06/2026
Sampling Conducted By : Mr. Sachin Kumar
Sample Description : ETP-2 Guard Pond

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (NH ₃)	mg/L	3.46	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA 24th Ed
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA 24th Ed
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA 24th Ed
6	Benzo(a)Pyrene	mg/L	ND(DL-0.02)	0.2	APHA 24th Ed

Remark:

ND Not Detected, DL Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Naptha Cracker
Dist. Panipath, Haryana, INDIA

ULR No: TC148142800002414F

Test Report Date: 07/07/2025

Sample Particulars

Nature of Sample : **Waste Water**
Sample Quantity & Packaging : **1.0 Liter, Pet Bottle**
Test Started on : **30/06/2025**
Test Completed : **06/07/2025**
Method of Sampling : **SOP/B/D-3**
Date of Sampling : **26/06/2025**
Sampling Conducted By : **Mr. Sachin Kumar**
Sample Description : **ETP-3 Guard Pond 3**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.65	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	42	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	140	250	IS:3025 (P-56)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	23	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.18	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	2.30	<5	IS:3025 (P-50)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remark:

ND-Not Detected/DL-Detection Limit



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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202606260112
Test Report Date: 07/07/2026

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	30/06/2026
Test Completed	06/07/2026
Method of Sampling	SOP/BD-3
Date of Sampling	26/06/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	ETP-3 Guard Pond 3

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS-3025 (P-52)

Remark:

ND-Not Detected/DL-Detection Limit

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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

ULR No.: TC14814260000468F
Test Report Date: 07/02/2026

Sample Particulars

Nature of Sample: Waste Water
Sample Quantity & Packaging: 1.0 Liter, Pet Bottle
Test Started on: 31/01/2026
Test Completed: 06/02/2026
Method of Sampling: SOPB/D-3
Date of Sampling: 29/01/2026
Sampling Conducted By: Nitya Laboratories
Sample Description: Thirana Drain Pump Discharge(Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.86	6.5-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	64	100.0	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	100	250.0	IS 3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	19	30.0	IS 3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.80	<1	IS 3025 (P-43)
6	Sulphide (S)	mg/L	1.45	2.0	IS 3025 (P-29)
7	Fluoride	mg/L	3.12	<5	IS 3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS 3025 (P-52)

Remark:

ND-Not Detected(UL- Detection Limit)



TC-14814



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Test Report

Issued To M/s Indian Oil Corporation Limited
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Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202512270119
Test Report Date: 07/02/2025

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	31/01/2025
Test Completed	06/02/2025
Method of Sampling	SOP/BJD-3
Date of Sampling	29/01/2025
Sampling Conducted By	Nitya Laboratories
Sample Description	Thirana Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)
3	Total Dissolved Solids	mg/l	1640	-	IS:3025 (P-16)

Remark:
ND-Not Detected(DL-Detection Limit)

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Authorised
(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

ULR No.: TC14814280000866F

Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample: Waste Water

Sample Quantity & Packaging: 1.0 Liter, Pet Bottle

Test Started on: 26/02/2026

Test Completed: 04/03/2026

Method of Sampling: SOP/S/D-3

Date of Sampling: 24/02/2026

Sampling Conducted By: Nitya Laboratories

Sample Description: Thirana Drain Pump Discharge(Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.54	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	52	100.0	IS:3026 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	120	250.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	20	30.0	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.64	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	2.96	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ^{VI})	mg/L	ND	0.1	IS:3025 (P-52)

Remarks:

ND-Not Detected/DL-Detection Limit



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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202602240119
Test Report Date: 05/03/2026

Sample Particulars

Nature of Sample: Waste Water
Sample Quantity & Packaging: 1.0 Liter, Pet Bottle
Test Started on: 26/02/2026
Test Completed: 04/03/2026
Method of Sampling: SOP/B/D-3
Date of Sampling: 24/02/2026
Sampling Conducted By: Nitya Laboratories
Sample Description: Thirana Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)
3	Total Dissolved Solids	mg/l	1910	-	IS:3025 (P-15)

Remark:
ND-Not Detected(DL-Detection Limit)

(AUTHORISED SIGNATORY)
(RIVINDER MITTAL)

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

ULR No.: TC148142600001052F
Test Report Date: 28/03/2026

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	21/03/2026
Test Completed	27/03/2026
Method of Sampling	SOP/BIQ-3
Date of Sampling	16/03/2026
Sampling Conducted By	Nitya Laboratories
Sample Description	Thirana Drain Pump Discharge(Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.56	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	78	100.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	130	250.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	22	30.0	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.48	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.0	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.09	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remark:
ND-Not DetectedDL-Detection Limit



TC-14814



(RAVINDER MITTAL)

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202603160119

Test Report Date: 28/03/2026

Sample Particulars

Nature of Sample	: Waste Water
Sample Quantity & Packaging	: 1.0 Liter, Pet Bottle
Test Started on	: 21/03/2026
Test Completed	: 27/03/2026
Method of Sampling	: SOP/BrD-3
Date of Sampling	: 16/03/2026
Sampling Conducted By	: Nitya Laboratories
Sample Description	: Thirana Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-52)
3	Total Dissolved Solids	mg/l	1878	-	IS:3025 (P-16)

Remark:
ND-Not Detected(DL-Detection Limit)

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(RAVINDER MITTAL)

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
(Refinery Division)
Panipat Refinery, Naptha-Cracker
Dist. Panipath, Haryana, INDIA

ULR No.: TC148142600001575F

Test Report Date: 28/04/2026

Sample Particulars

Nature of Sample : **Waste Water**

Sample Quantity & Packaging : **1.0 Liter, Pet Bottle**

Test Started on : **21/04/2026**

Test Completed : **27/04/2026**

Method of Sampling : **SOP/BJD-3**

Date of Sampling : **17/04/2026**

Sampling Conducted By : **Mr. Sachin Kumar**

Sample Description : **Thirana Drain Pump Discharge(Fall Point)**

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	—	7.75	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	65	100.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	150	250.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	25	30.0	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.56	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.23	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.50	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Remark:

ND=Not Detected(EL. Detection Limit)



TC-14814



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Test Report

Issued To	M/s Indian Oil Corporation Limited (Refinery Division) Pangat Refinery, Naptha Cracker Dist. Panzesh, Hariana, INDIA
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Test Report No. 202504170119

Test Report Date: 28/04/2025

Sample Particulars

Nature of Burials

Waste Water

Sample Quantity & Packaging

1.5 Liter Dist Bottle

Test Results are

21/04/2006

Test Completed

271043006

Method of Sampling

SOP/ELD-3

Date of Sampling: _____

17042008

Sampling Conducted By

My Section Editor

Sample Descriptions

Thioma Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-G-1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS 3025 (P-52)
3	Total Dissolved Solids	mg/l	1690	-	IS 3025 (P-16)

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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(RAVINDER MITTAL)

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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Dist. Panipath, Haryana, INDIA

ULR No: TC148142500001949F

Test Report Date: 18/04/2020

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	10 Liter, Pet Bottle
Test Started on	12/05/2026
Test Completed	18/05/2026
Method of Sampling	SOP/B/D-3
Date of Sampling	08/05/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	Thirana Drain Pump Discharge/Fall Point

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	---	7.64	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	60	100.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	180	250.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	28	30.0	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.60	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS:3025 (P-39)
7	Fluoride	mg/L	3.30	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS:3025 (P-52)

Keywords: *work, stress, coping, organizational commitment, organizational citizenship behavior*

POLYMER LETTERS



TC-14874

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Test Report

Issued To: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No.: 202605080124

Test Report Date: 15/05/2025

Sample Particulars

Nature of Sample	: Waste Water
Sample Quantity & Packaging	: 1.0 Liter, Pet Bottle
Test Started on	: 12/05/2026
Test Completed	: 18/05/2026
Method of Sampling	: SOP/BI/D-3
Date of Sampling	: 08/05/2026
Sampling Conducted By	: Mr. Sachin Kumar
Sample Description	: Thirana Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-24th Ed.
2	Total Chromium	mg/L	ND	2.0	IS-3025 (P-52)
3	Total Dissolved Solids	mg/l	1540	-	IS-3025 (P-16)

[illegible]

842: **High Defocused DL - Detection Limit**

(AUTHORISED SIGNATORY)

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[illegible]

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Test Report

Issued To: **M/s Indian Oil Corporation Limited**
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Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

ULR No.: TC148142800002412F

Test Report Date: 07/07/2026

Sample Particulars

Nature of Sample: Waste Water

Sample Quantity & Packaging: 1.0 Liter, Pet Bottle

Test Started on: 30/06/2026

Test Completed: 06/07/2026

Method of Sampling: SOP/B/D-3

Date of Sampling: 26/06/2026

Sampling Conducted By: Mr. Sachin Kumar

Sample Description: Thrana Drain Pump Discharge(Fail Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	--	7.78	6.5-8.5	IS 3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	74	100.0	IS 3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	170	250.0	IS 3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	26	30.0	IS 3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.50	<1	IS 3025 (P-43)
6	Sulphide (S)	mg/L	ND	2.0	IS 3025 (P-26)
7	Fluoride	mg/L	2.90	<5	IS 3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	ND	0.1	IS 3025 (P-52)

Remark:
ND-Not Detected,CL-Detection Limit



TC-14814

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Test Report

Issued To M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Refinery, Naptha Cracker
Distt. Panipath, Haryana, INDIA

Test Report No. 202606260119

Test Report Date 07/07/2026

Sample Particulars

Nature of Sample	Waste Water
Sample Quantity & Packaging	1.0 Liter, Pet Bottle
Test Started on	30/06/2026
Test Completed	06/07/2026
Method of Sampling	SOP/8/D.3
Date of Sampling	26/06/2026
Sampling Conducted By	Mr. Sachin Kumar
Sample Description	Thirana Drain Pump Discharge (Fall Point)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND	2.0	IS:3025 (P-62)
3	Total Dissolved Solids	mg/l	1480	-	IS:3025 (P-16)

Remark:

ND-Not Detected/DL-Detection Limit

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Panipat Refinery and Petrochemical complex

Periphery Noise Monitoring Results

Date/Period: -07 February 2026 (Q-4-2025-2026)

S. No.	Location Name	Noise results	
		Day time (6.00 a.m. to 10.00 p.m) (Limit 75 dBA)*	Night time (10.00 p.m. to 6.00 a.m) (Limit 70 dBA)*
1	Gate no. 1	70.1	68.9
2	PTA Gate.	73.6	71.7
3	At entry of PNC flyover.	72.1	69.4
4	Near Raw water pond (north west corner).	67.9	66.4
5	Boundary wall (near operator cabin 4 of offsites.)	58.1	56.6
6	Near MCR.	64.5	62.4
7	Near Boundary wall at backside of ETP-2.	68.5	66.5
8	Near CR-11	61.2	55.6
9	Gate No. 2 (Time office)	67.7	65.2
10	Store	69.3	66.7
11	PTA control room	62.1	60.7
12	Admin building	58.6	55.3
13	Project building	62.7	66.7
14	PX control room	67.2	65.4
15	3 G Ethanol	58.1	56.7
16	Main Gate(2G Ethanol Plant)	69.6	67.4
17	Control Room (2G Ethanol Plant)	55.4	54.3

*Note: as per Noise pollution (regulation and control) rules 2000



Ind. Hygienist



Occupational Health Physician

OHC Physician in charge

डा. सुदीप कुमार
Dr. Sudip Kumar
रजि. नं. एच. एन. 37207 एच. एन. (मिडिल ऑफिसर)
Reg. No. HN : 37207 AM (Med. Officer)
पानीपत (राजस्थान) मेडिकल ऑफिस
Panipat Refinery Hospital D.C. Lt. 172140

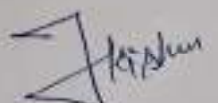


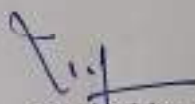
Panipat Refinery and Petrochemical complex
WORK AREA MONITORING FOR SOUND-PR FY: 2026-27

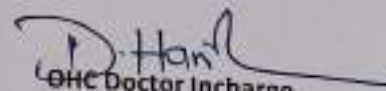
Frequency of monitoring will be Quarterly

Date- 30.06.2025

S. No.	Location name	Noise results	
		Day time	Night time
		(6.00 a.m. to 10.00 p.m)	(10.00 p.m. to 6.00 a.m)
		(Limit 75 dBA)*	(Limit 70 dBA)*
PR locations			
1	Gate no. 1	67.6	65.4
2	PTA Gate.	71.1	70
3	At entry of PNC flyover.	69.2	68.1
4	Near Raw water pond (north west corner).	68.6	62.6
5	Boundary wall (near operator cabin 4 of offsites.)	70.1	68.6
6	Near MCR.	68.7	62.4
7	Near Boundary wall at backside of ETP-2.	68.6	64.6
8	Near CR-11	70.2	68.2
9	Gate No. 2 (Time office)	69.6	67.4
10	Store	65.4	65.1
11	PTA control room	67.3	66.5
12	Admin building	52.6	51.9
13	Project building	69.8	68.7
14	PX control room	59.7	59.6
15	3 G Ethanol	68.5	62.4
16	Main Gate(2G Ethanol Plant)	73.1	69.7
17	Control Room (2G Ethanol Plant)	65.7	64.3
18	Lagoon Tank (2G Ehanol Plant)	72.8	68.1
19	Main Gate P-25	73.4	69.2
20	Gate No. P-25	72.2	70
21	BS-VI (NDHDT Unit)	71.6	68.6


Ind. Hygienist


OH Physician


OHC Doctor Incharge