

इंडियन ऑयल कापरिशन लिमिटेड वर्गापत प्रभावनी एवं बेहोकेविकन बॉल्टोबर वर्गापत, हरियाणा - 132140 Indian Oil Corporation Limited Paginal Refigery & Petrochemical Complex

IndianOil

Pampat, Haryana - 132140

bentre was the trempt full pape handands areas an

Trem: 0180-252 4001/0180-2578033

Parentla sum References Divisions

Ref No: PR/HSE/2024/EC Compliance/1

Date: 12.07.2024

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'2024 to June'2024)- 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'2024 to June'2024 of the MoEF&CC stipulations w.r.t. following EC letters:

- 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 M/s Indian Oil Corporation Limited.
- 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.
- 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.
- EC Letter No. J.11011/9/2001-IA II (I) dated 06.12.2001 for MS Quality Up-gradation Project at Panipat Refinery by M/s Indian Oil Corporation Limited.
- EC Letter No. J.11011/52/2000-IA II (I) dated 20.01.2003 for Modification in Plant layout of Paraxylene & Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP).

010

Min for by

Etahung..

- 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.
- 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.
- 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 Baholl, Block Madlauda, Panipat Refinery Road, District Panipat (Haryana) By M/S Indian Oil Corporation Limited.
- 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.
- 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 refinery complex.

Thanking You, Sir.

Yours faithfully

(P.V.Ramakrishna)
General Manager-(HS&E)
For and on behalf of IOCL,
Panipat Refinery & Petro Chemical Complex

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 Upgradation 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 5 nos. Sulphur Recovery Units (SRUs) as detailed below and 4 (99.9% recovery efficiency) out of 5 units are in operation: • 1 no. SRUs: 99% efficiency ,1X115 MT/day capacity • 4 no. SRUs: 99.9% efficiency ,4X225 MT/day capacity
4.	Low Sulfur fuel (Sulphur content not exceeding 1%) should be used in the boilers/furnaces.	Complied Fuel with sulphur content <=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 SO2 from the refinery should not exceed 1 Ton/hr.	Complied SO ₂ emission (actual SO ₂ emission, 800-900- 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 9 nos. of CAAQMS (2 nos. in Panipat city, 1 no. in Refinery township, 5 nos. in Refinery & 1 in Polishing Pond area) are in operation. These were set up in consultation with HSPCB. Also, one mobile van for ambient air quality monitoring is in place. All the CAAQMS stations are connected to the CPCB AAQMS server. For all stacks: SO ₂ , NO ₃ , CO & PM analyzers are available and connected to CPCR/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 Compiled 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.
	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		Con	npliance	
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	Report has On-site Dis	s been sub saster Mar Analysis is from	mitted. nagement also prep approved	s is conducted Plan based or pared which is Third Party
20	plant premises. A 'no development zone' of minimum 5km radius in				
20	between the refinery and the Panipat town should be provided. Where only restricted growth on nonpolluting industries may be allowed (Action – State Govt.)	Letter dated 16.05.2020 and subseq letter dated 10.01.2024 sent from P DC,Panipat requesting enforcement of			t from PR to
21.	No tree should be cut from the site without prior written order of the competent authority.	condition. Complied			
22.	The industrial township should be located on the northern side of the refinery i.e. in the up-wind direction.	Complied			
	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.	Pipeline and Rail			s is through
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.			tablished
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	Year-wise e	expenditur		akhs) 2023-24
	Ministry.	Recurrin	Non-	Recurr	Non-
	, and the second	g	recurri ng	ing	recurring
		3809.3	109.6	3378.2	



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	Conc	litions stipulated in the EC letter	Status
1.	by f	company should strictly adhere to the stipulations made MOE&F vide O.M. No. J.11011/76/96-IAII dated 5th ch,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
	6)	The gaseous emissions (SO ₂ , NO ₂ , 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.		hur recovery units with more than 99% efficiency shall rovided.	Complied Four SRUs with 99.9% recovery have been installed & are operational.
4.	a)	Adequate ambient air quality monitoring stations SO ₂ , NO ₃ , HC should be set up in the Refinery area in consultation with SPCB, based on occurrence of maximum ground level concentration and downwind direction of wind.	Complied 9 nos. of CAAQMS (5 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
	b)	The monitoring network must be decided based on	monitoring is in place. 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 , NOx, CO & PM.	For all stacks: SO ₂ , NO ₃ , 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.
	100.00	Sensors for detecting HC leakages should also be provided at strategic locations.	Hydrocarbon leak detectors installed at strategic locations.



S N	Con	ditions 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.
Ger	neral conditions:	
S	Conditions stipulated in the EC letter	Status
N	11 July (M-Harry Co-Harry MAD 12 12 12 12 12 12 12 12 12 12 12 12 12	
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 3rd 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.	
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
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.	Welfare of Underprivileged 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) FY:2022-23 FY:2023-24
		Recurrin Non- g recurri ng recurring ng
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
	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	 The gaseous emission (SO₂, NO₄ 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 Bimonthly basis. Stacks are connected online to CPCB/HSPCB server with parameters such as SO2, NOx, 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 ₃ , 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 9, CAAQMS two Ambient Air Monitoristations 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 ₈ .	Complied. PX-PTA stacks are connected online to CPCB/SPCB server with parameters such as SO2, NOx, 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.	
	 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.	
	 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 255m3/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 m3/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.
	 The concerned units must be shut down in cases of effluent quality exceeding the prescribed limits. 	Noted
SN	General Conditions	
	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).				on turbo istic chambers	
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 developme has been properly taken care as per IOCL Corporate Social Responsibility Policy through following CSR activities. Promoting Sanitation Environment Sustainability/ Renewable Energy Sources Rural Development/ Promoting Prevention Healthcare/ Promotion of Sports Promoting Education Enhancement of Vocational Skills Empowering Women			as per IOCL's Policy through Renewable ing Preventive orts	
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.	Welfare of Underprivileged Complied Separate environment management cell is in place.			ent cell is in	
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			obtained.	
14	The funds earmarked for the environmental protection measures should not be diverted for any other purpose and year-wise expenditure		Implemented. Year-wise expenditure: (INR in Lakhs)			
	should be submitted to this Ministry (Regional	FY:202	2-23	FY:2	023-24	
	Office, Chandigarh/CPCB/SPCB)	Recurring	Non- recurri ng	Recurri ng	Non- recurring	
		3809.3	109.6	3378.2	62.9	
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.			and the second s	

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-11011/9/2001IA. 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 9th April, 2001.	Complied (Stipulations are being strictly adhered for 6 MMTPA EC condition).
2.	The company shall also ensure that total SO₂ 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.



Modification in Plant Layout of Paraxylne 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 Retinery 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 800-900 kg/hr and from PX-PTA is in the range of 150-200 kg/hr)
3	As per the commitment given, the total quantity of treated effluent shall not exceed 255m3/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.



P-15
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. I-11001/60/2000-IA-II dated 9th April, 2001 for expansion of Panipat Refinery from 6 MMTPA to 12 MMTPA	Complied
2.	The gaseous emissions (SO ₂ , NO ₈ 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 ₃ , 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 ₃ . Data on VOC should be monitored and submitted to the SPCB / Ministry.	9 nos. CAAQMS (5 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. analyzers are available and connected with CPCB server. Fugitive emission monitoring for Hydrocarbon and benzene is being carried out through approved agency.
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.	All reports are submitted to HSPCB as stated. 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	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 5 nos. Sulphur Recovery Units (SRUs) as detailed below and 4 (99.9 % recovery efficiency) out of 5 units are in operation: 1 no. SRU: 99% efficiency ,1X115 MT/day capacity 4 no. SRUs: 99.9% efficiency ,4X225 MT/day capacity
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 6-12 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



	Petrochemical MINAS is discharged into
	Thirana Drain as per approvals/ Consent to Operate from MOEFCC, HSPCB, and Irrigation Department.
ireen belt of adequate width and density should be provided to mitigate the effects of fugitive missions all around the plant. The bio-sludge rom the ETP should be used as manure in the reen belt development. Company shall develop reenbelt in consultation with DFO as per CPCB uidelines.	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.
the IOCL shall make efforts to sell petroleum oke (0.9 MMTPA) to organized industries having onsent from the concerned State Pollution control Board. Further, the Pet-coke from the belayed Coker Unit should be conveyed to torage area by pipe conveyer system. The ompany 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.
the oily sludge generated from the refinery operation should be subjected to melting pit reatment for recovery of oil. The recovered oil hould be recycled. The residual oily sludge hould 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.
The company should adopt mounded storage for PG. 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.
Occupational Health Surveillance of the workers hould done on a regular basis and records naintained 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.
al conditions	
The project authorities must strictly adhere to the stipulations made by the Haryana State Pollution Control Board and the State Sovernment.	Complied
No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment & corests.	Noted.
the bottom	ne project authorities must strictly adhere to be stipulations made by the Haryana State offlution Control Board and the State overnment. The further expansion or modernization in the ant should be carried out without prior oproval of the Ministry of Environment &

S	EC Conditions		Compli	ance Statu	s.
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 monitor online and from approved lab on bi-month basis. All stacks are connected online CPCB/HSPCB server with parameters such SO ₂ , NO ₄ , CO & PM.			on bi-monthly led online to neters such as
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	Implemented. Year-wise expenditure:(INR in Lakhs) FY:2023-24			
	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.				
		FY:202		Recurri	023-24 Non-
		Recurring	Non- recurri ng	ng	recurring
		3809.3	109.6	3378.2	62.9
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 months conditions a monitoring r	re submit	ted along	orts on EC with various

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)

SI. No.	EC Conditions	Compliance Status
(1)	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.
(11)	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 RC 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.
(111)	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 16.06.2020 which is valid upto 30.09.2023.
(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 hg/hr.	SO ₂ emissions from the Refiner (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 refiner 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.

SI. No.	EC Conditions	Compliance Status
(viii)	Total fresh water requirement shall not exceed 354 m3/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 clearing 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

SI. 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.	Stack analyzers are installed and connected to CPCB/HSPCB 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.	Complied
(xx)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied
Gener:	al 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. All CAAQMS are connected to CPCB AAQMS server.
(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

SI. 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 us 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	Implemented Year-wise expenditure:(INR in Lakhs)		
	to implement the conditions stipulated by the			
	Ministry of Environment, Forest and Climate Change as well as the State Government along	FY:2022-23 FY:2023-24 Recurri Non- Recurri Non-		
	with the implementation schedule for all the conditions stipulated herein. The funds so	ng recurr ng recurrin		
	earmarked for environment management/ pollution control measures shall not be diverted	ing g 3809.3 109.6 3378.2 62.9		
0.07101	for any other purpose.			
(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		

SI. 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



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
Gen	eral 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 confirm 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 do	ne.
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 earmarked environme	funds is
		Capital cost 3507	Recurring cost 187 lakhs
		lakhs	
	A DEC. Of the opposition (particular). Bureau East and actual and actual	control me	asures:
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	

1,	The project proponent shall install 10 TPD 2G Ethanol demo plant for	Complied
	R&D purpose.	A PATRACE MANAGEMENT
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. Being non-hazardous, sludge from ETP is disposed off in landfilling.
6.	Ash management shall be ensured by utilizing for manufacturing bricks.	Complied, M/s Shree Cement and M/s Garg build solutions had been lined up for utilization of Ash in cement and bricks manufacturing respectively.
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 m³/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 Ministry of water resources, Haryana is taken and it is valid upto 31.03.2026.
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, Being non-hazardous, sludge from ETP is disposed off in landfilling.

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.	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.		Stack is provided as per CPCB/SPCB guidelines. For online continuous monitoring of effluent and emission, analyzers connectivity to the CPCB and HSPCB server is under progress. Web camera and flow meter installed.

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)

5N	eneral Conditions Compliance Status		
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 (F) 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 confirm 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.	



7.35		
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.	
12.		
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.	
14.		District Control Control
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
Sne	cific 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 26th 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	12
	management scheme shall be implemented.	Monitoring of odour is done regularly and its control
7.	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 Ministry of water resources, Haryana if taken and it is valid upto 23,000 and it is va
	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.		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)

EC Conditions	Compliance Status
The project shall conform to ZLD.	Noted and shall be complied
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
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
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
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
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
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
Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt	Will be complied
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.
	The project shall conform to ZLD. 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. 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. 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. 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. Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond. 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. 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. 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



(x).	The company shall undertake waste minimization measures as below: - a. Metering and control of quantities of active ingredients to	Will be complied
	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 clearing to reduce	
(xi).	wastewater generation. 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.	Will be complied
(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 SCPB/CPCB.	Noted and will be complied.



(i).	No further expansion or modifications in the plant, other than	Noted
	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.	Notes
(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



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page Lof1

Issued To:

M/s Indian Oil Corporation Limited

Report No.

AAL ENV-20240102015, AAL ENV-20240105016,

(Refineries Division) Panigat Naphtha Crocker. Planipat (Flaryano)

AAL ENV-20240109007, AAL ENV-20240112005 AAL ENV-20240116014, AAL ENV-20240119016. AAL ENV-20240123011, AAL ENV-20240130005

05/02/1024 Date of Reporting:

Sample Description: Work order frem:

Ambient Air Quality Monitoring Panipat Refinery (Tuble-D)

Sampling Method:

15:5182 (Part-14)-2000

Roof of Administration Building Sampling Location:

Sampling Duration:

24:00 Hrs

Sampling Done By: AAL

TEST RESULTS

Test Parameters→ Date of Sampling4	PM _{EX} (Agrar)	PM _{In} (again)	SO ₂ (inpos)	NO ₁ (repur)	CO (ing/m³)	O _J (pigmil)	NH ₁ (agaw ²)	()sg/m²)	C _a H _a (ug/m²)	(uplair)	Ni (ng/m²)	B(a)P (ngar)
01/01/2024	83.8	173.5	10.9	29.4	0.85	32.5	25.9	ND	1.02	ND	ND	ND
04/01/2024	87.6	189,6	12.5	12.7	0.95	30.2	28:1	ND	1.14	NO	ND	NO
08/01/2024	81.2	196.3	10.4	24.9	0.82	27.4	25.1	ND	1.05	ND	ND	ND
(1/01/2024	90.3	205.8	12.5	22.3	1.25	29,6	32.8	ND	1.12	NO	ND	ND
15/01/2054	65.2	138.9	10.1	20.9	E15	26.4	25.7	ND	1.07	ND	ND	IND
18/01/2024	69.0	131.4	13.5	23.6	1.00	24,5	27.1	ND	1.05	ND	ND	ND
22/01/2924	Rt.c	147.3	12.7	27.3	1,13	27.4	29.3	ND	1.02	ND	ND	ND
29/01/2024	92.7	141.1	14:5	29,3	1.18	25.1	27.4	ND	1.12	ND	ND	ND
Muximum	92,7	205.8	14.5	29.3	1.25	32.5	29,3	7-	1.14		4.0	30
Minimum	65.2	131.4	10.1	20.9	0.82	24.5	22.8	3	1.02	3		-
Average	81.9	165.5	12.1	24.3	1.04	27.9	26,4	100	1.07	- 5		648
NAAQ Standard	60	100	50	80	2	100	400	1	.5	6	20	1
Test Method	Solitar. Solitar	79-3182(P- 20)-260s	18-8 (82 (9-2)-2003	15 #10018-	19-1/92ds- 100-1209	19, 5,821 P	25-81010F- 210-2018	15-8182(F- 22)-2004	85-214200 113-2000	19-811/2075 223-2004	AALSOF 608	15 STEEP 12)-2004

** End of Report**

Monoral Antique Air Quebig standard (Tr-Net Cimetes). Des Detection Lonis. Note de la 1997 - Nethel un New Chemic Assault for Assault Propagation (Chemical Lonis). Neglect sellons neces des shows one of metal membran.

OSH SRIVASTAVA Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, encorsement of products is neither interied not implied

Total lietality of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in pan without written convent of the laboratory.

This report shall not be used in any advertising media or as evidence in the count of law without prior written convent of the laboratory. The non-perishable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of export unless specified.



Work order frem:

Sampling Location:

ARIHANT ANALYTICAL LABORATORY PVT. LTD.

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT Report No.

Page 1-of 1

Issued To: M/s Indian Oil Corporation Limited

(Retineries Division) Panipat Naphtha Cracker,

Panipat (Haryana)

AAL ENV-20240202004, AAL ENV-20240266013, AAL ENV-20240209002, AAL ENV-20240213016. AAL ENV-20240216015; AAL ENV-20240220013,

AAL ENV-20240223008, AAL ENV-20240227017

Date of Reporting:

04/03/2024

Sample Description: Ambient Air Quality Monitoring

Panipat Refinery (Table-D) Roof of Administration Building Sampling Method:

IS:5182 (Part-14)-2000

Sampling Duration: 24:00 Hrs Sampling Done By: AAL

TEST RESULTS

Test Parameters > Date of Samplings	PM _{2.8} (µg/m²)	PM ₁₀ (agm ¹)	SQ ₂ (sgm ²)	NO ₁ (signw ²)	CO (mg/m²).	Ο ₃ (μ <u>ψ</u> /ω')	NH ₂ (ugm')	Pb (ug/m²)	C _s H ₆ (µg/in ³)	As (ogim')	Ni (água ⁵)	B(a)P (ng/m²)
01/02/2024	66.5	110.8	12.3	25.8	0.75	30.9	23,2	ND	1.10	ND	ND	ND
05/02/2024	57.2	95.4	10.2	23,1	0.83	28.2	21.6	ND	1.05	ND	ND	ND
08/02/2024	48.6	92.3	9,8	21,7	0.95	29.7	20.9	ND	1.09	ND	ND.	ND
12/02/2024	52.3	90.7	13,6	27,3	1.06	26.8	23.6	ND	1.10	ND	ND	ND
15/02/2024	54.1	94.6	12.7	25.2	1.08	23,7	26.9	ND	1.12	ND	NO	ND
19/02/2024	58.4	108.3	10.4	21.9	1.05	24.9	24.2	ND	1,04	ND	ND	ND
22/02/2024	55.6	97,2	9.8	23.6	1.12	22.7	20.8	ND	1.06	ND	ND	ND
26/02/2024	49,7	88.4	11.4	25.1	1,16	24.3	25.9	ND	1.10	ND	ND	ND
Maximum	66.5	110.8	13.6	27.3	1.16	30.9	26.9	*	1.12			
Minimum	48.6	88.4	9.8	21.7	0.75	22,7	20.8	198	1.04			
Average	55.3	97.2	113	24.2	1.00	26.4	23.4	-	1.08		5 %	
NAAQ Standard	60	100	80	80	2	100	460	1	5	6	20	
Fest Metinsd	EC 8182(P- 24)-2019	15-3182(P- 13)-2006	48-8183 (P-2)-2901	15-51A2(P- 60-2006	10)-1509	15-1185cP- 9-1974	85-3182(P- /25)-2818	(S-8183(P- 213-2004	19-51KHP- 11-2004	25-51421P- 225-2004	A11,500 (666	15-51826 <i>p</i> 137-2004

End of Report

Simular Anticol for Quality Standard AD-Not Debattak DL- Debatt Physical Society, Noted Sachas of Gregory, America (as Asy of Desgrat American Home Second Says (Obs. the Bud ed) American

CISH SRIVASTAVA Technical Mana

Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.

Total liability of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising middle or as evidence in the court of law without prior written consent of the laboratory.
5. The non-perishable sample received shall be destroyed after one month and penaltable sample shall be destroyed after one week from the date of issue of report unless specified.



Sample Description:

ARIHANT ANALYTICAL LABORATORY PVT. LTD.

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Issued To: M/s Indian Oil Corporation Limited

(Refineries Division) Panipat Naphtha Cracker. Panipat (Haryana)

Report No.

Page 1 of 1

AAL ENV-20240305027, AAL ENV-20240308018, AAL ENV-20240312016, AAL ENV-20240315039, AAL ENV-20246319003, AAL ENV-20240322017,

AAL ENV-20240327015, AAL ENV-20240330012

04/04/2024

Date of Reporting:

15:5182 (Part-14)-2000

Ambient Air Quality Monitoring Sampling Method: Panipar Refinery (Table-D)

Sampling Duration:

24:00 Hrs

Work order frem: Sampling Location: Roof of Administration Building

Sampling Done By: AAL

TEST RESULTS

Test Parameters -> Date of Sampling I	PAtra (ng/m²)	PM _m (segme)	SO _L (rgm ³)	NO ₂ (agine)	CO (mg/m ²)	O ₃	NH ₃ (µg·m³)	Ph (ug/m²)	C _a H _a (µg/m ²)	As (ngini)	Ni (op/m²)	B(a)I*
04/01/2024	48.9	89.3	10.5	23.4	0.79	27.4	24.5	ND	1.03	ND	ND	ND
07/03/2024	45.1	84.6	11.6	20.3	0.85	30.8	20.6	ND	1.12	ND:	:ND	ND
11/03/2024	52.4	80.5	12.8	23.6	1.05	32.1	22.4	NO	1,15	ND.	ND	ND
14-03/2024	43.7	83.6	11.9	22.3.	1.02	28.2	20.5	ND:	1.06	ND	ND	ND
18/03/2024	473	85.7	13.3	20,1	1:09	25.6	21,2	ND	1.10	ND:	1615	NO
24/03/2024	50,2	90.5	14.1	18.6	1:03	28.8	22.8	ND	1.18	ND	ND	ND
26/03/2024	47.3	89.9	9.2	19,5	1/12	26.3	24.6	ND	1,08	ND	:ND:	ND
29/03/2024	45.5	82.4	10.9	22.3	1.12	27.1	26.6	ND.	L15	ND	ND	ND
Maximum	52.4	90.5	14.1	23.6	1.12	32.1	26.6	-	1.18			*
Minimum	43.7	80.5	9.2	18.6	0,79	25.6	20.5	/	1.06		2	72
Average	47.6	85.8	11.8	21.3	1.01	28.3	22.9	19	1.12			
NAAQ Standard	60	100	80	310	2	700	400	1:	-5	-6	20	1
Fest Method	24)-2619 24)-2619	15-50.82(P- 23)-7006	\$5-9263 (P-33-268)	(5-7482)2- 4)-5006	19-5185)7- 19-19-98	88-3182-2- 11-117-1	15-5182(P) 25)-2+18	25-078229V 430-3084	15-5153(Pv 11)-2m/s	15-5152(F- 22)-3004	AALGOP:	35-5183/F- 121-306-1

** End of Report**

TOSH SRIVAS LA **Authorised Signatory**

Total liability of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the count of law without prior written consent of the laboratory.

The non-perichable sample received shall be destroyed after one month and perionable sample shall be destroyed after one week from the date of issue of report unless specified.

The Result indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.



Sample Description:

Work order Item:

ARIHANT ANALYTICAL LABORATORY PVT. LTD.

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Issued To:

M/s Indian Oil Corporation Limited

Ambient Air Quality Monitoring

(Refineries Division)

Panipat Naphtha Cracker. Panipat (Haryana)

Panipat Refinery (Table-D)

Report No.

Page 1 of 1 AAL ENV-20240402032, AAL ENV-20240405005, AAL ENV-20240409006, AAL ENV-20240412006.

AAL ENV-20240416038, AAL ENV-20240420006, AAL ENV-20240423010, AAL ENV-20240426003, AAL ENV-20240430009

06/05/2024

Date of Reporting:

Sampling Method:

IS:5182 (Part-14)-2000

Sampling Duration: Sampling Done By:

24:00 Hrs

AAL

Sampling Location: Roof of Administration Building

TEST RESULTS

	st Parameters → te of Sampling↓	PMLs (pg/m²)	PM _{re} (ages)	SO ₂ (ugm²)	NO ₃ (µp/m ³)	CO (mg/m²)	O ₃ ((rg/m²)	SH ₂ (agm ²)	(riginal)	CaHa (ug/m²)	Ax (agin')	Ni (ngm²)	B(a)P (sg/m²
1	01/04/2024	48.2	90.3	13.6	20.5	0.95	35.4	22.4	ND	0.98	ND	ND	ND
2	64/04/2024	45.4	85.6	11.5	18.9	1.02	32.3	26.9	ND	1.62	ND	ND	ND
3	08/04/2024	493	95.7	14,3	19,3	1.05	29.6	23.2	ND .	1,06	ND	ND	ND
4	11/04/2024	52.5	91.4	17.2	24.2	0.95	31.7	25.3	ND	1.10	ND	ND	ND
5	15/04/2024	49.7	92.6	12.8	21.5	0.98	37.2	29.8	ND	1.09	ND	ND	ND:
6	19/04/2024	42.4	82.6	13.9	27.4	1.05	28.4	21.4	ND	1.00	ND	ND	ND
7	22/04/2024	46.2	85.7	10.1	25,3	1.02	32.3	24.7	ND	1.08	ND	ND	ND
B	25/04/2024	40.8	813	11.7	24.6	1.08	35.7	29.3	ND	1.06	ND	ND	ND
9	29/04/2024	47,8	90.3	14.7	24.5	0.95	29.7	24,3	ND	1.08	ND	ND	ND
	Maximum	52.5	95.7	17.2	27,4	1.08	37.2	29.8	3.	1.16			
	Minimum	40.8	81.3	10.1	18.9	0.95	28.4	21.4		0.98	-		78:
	Average	46.9	88.4	13.3	22.9	1.01	32.5	25.3	20	1.05			
AA	IQ Standard	60	100	80	80	2	100	400	31.	5	6	20	1
est	Method	18-5182(P- 34)-2019	23)-2006	15-5182 (P-2)-2001	15-51#3/P- 6)-2006	16-5183(P- 16)-1909	15-5082(P- 91-1974	15-5182(P- 25)-2018	15-5182(P. 225-2064	15-5182/P- 113-2986	15-5182(P) 12)-2004	AAL/SOP /608	19-0182(P- 12)-2004

End of Report

NAWON Nectional Account Air Quality Mandard ND-Not Described, Ed. v. Detection Landviso Per - U. Lugum Nockel (as No. v.), rughe Assembly Asy 1.18 og m². Sec Sample Australia within seven days from the date of sampling

Authorised Signatory

The Result Indicated above refer to the tested comple and listed test parameters only, endorsement of groducts is neither inferred not implied.
This report shall not be represented withly or in part without written consent of the laboratory.
This report shall not be represented withly or in part without written consent of the laboratory.
This report shall not be used in any advertising media or as evidence in the court of link without prior written consent of the laboratory.
The non-penshable warpie received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

M/s Indian Oil Corporation Limited

Report No.

Page 1 of 1 AAL ENV-20240503013, AAL ENV-20240507007,

AAL ENV-20240510004, AAL ENV-20240514023, AAL ENV-20240517010, AAL ENV-20240521005, AAL ENV-20240524012, AAL ENV-20240528009.

AAL ENV-20240531007

Date of Reporting:

05/06/2024

Sample Description:

Ambient Air Quality Monitoring

Sampling Method:

IS:5182 (Part-14)-2000

Work order Item:

Issued To:

Panipat Refinery (Table-D)

(Refineries Division)

Panipar (Haryana)

Panipat Naphtha Cracker,

Sampling Duration:

24:00 Hrs

Sampling Location:

Roof of Administration Building

Sampling Done By: AAL

TEST RESULTS

	st Parameters + te of Sampling +	PM _{2.9} (ag-m')	PM _{se} (ag/m ³)	SO ₃ (pg/m²)	NO ₂ (µg/m ²)	(mg/m²)	O ₃ (sigm ³)	NH; (agent)	Pb (eg/m²)	C ₄ H ₄ (ng/m ³)	As (og/m²)	Ní (ngm')	B(a)P
1	02/05/2024	46.6	81.8	12.8	21.2	1.08	31.9	23.6	ND	1.04	ND	ND	IIIS01
2	06/05/2024	42.4	78.4	125.4	1000	W-200		1		020	0.000	5000	ND
	T. SERVING MARKET	36.9	10.4	13.1	20.5	0.98	33,4	24.5	ND	1.00	ND	ND	ND
3	09/05/2024	48.3	83.9	12.4	22.4	1.00	30.5	22.4	ND	0.96	ND	ND	ND
4	13/05/2024	49.7	85.7	14.5	23.9	0.96	24.6	21.9	ND	0.95	ND	ND	ND
š	16/05/2024	45,1	87.4	13.6	20.6	0.92	20.2	21.6	5700	2000	721 W 5	1 9083	
	- SANIE INVESTIGAÇÃO			452,00	20.0	0.92	28,7	21,5	ND	1.02	ND	ND	ND
6	20/05/2024	44.5	84.8	12.3	25.7	1.02	24.2	22.5	ND	0.98	ND	ND	ND
7)	23/05/2024	48.3	80.2	11.7	24.8	1.06	25.4	23.8	ND	1.06	ND	ND	ND
8	27/05/2024	40.2	85.9	12,3	23.1	1.12	28.1	23,2	ND	1.10	ND	ND	ND
9	30/05/2024	45.5	88.3	13.5	22.4	1.17	26,8	22.8	ND	1.12	ND.	ND	ND
	Maximum	49.7	88.3	14.5	25.7	1.17	-33.4	24.5		1.12	-	030%	11000
	Minimum	40.2	78,4	11.7	20.5	0.00		43.4				ā	
	(Marconnesso)	STATE .	10,4	List	49.5	0.92	24.2	21.5		0.95	5 9 2	# 1	=
	Average	45.6	84.0	12.9	22.7	1.03	28.2	22,9		1.03	7240	2	
AA	Q Standard	60	100	80	80	2	100	400	1.	5	6	20	-1-
est	Method	85-5182cP- 24)-2010	18-5182(P- 23)-2986	(8-5182 (P-2)-200)	15-5152(P- 0)-2004	15-51A2(P- 10)-2999	85-9182(P- 9)-1974	ES-0162(P- 25)-2018	88-8182(P- 223-2004	15-5/80(P- 11)-2004	15-5182(P- 22)-2004	AALSOF mos	15-5192(P 120-2004

End of Report

NAAUS - National Assesses Air Quality Standard ND+Not Describe Dt. - Detection Limit Load (an PS) - 0.1 agrin* Nickel (as Ni.) - 1.0 ng/m*, Assesse (as As) - 1.0 ng/m*, Besteene (a Sample Analyzed within seven days from the date of sampling

izene (m Catta) - 1 0 mg/m², Hunno a-pyrene (HaP) - 0 5 mg/m²

TOSH SPINASTAVA Deputy Technique Monager

Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied Total liability of our laboratory is limited to the invoice amount.

 This report shall not be reproduced wholly or in part without written consent of the laboratory.
 This report shall not be used in any advertising media or as evidence in the court of law without prior written observed of the laboratory.
 The non-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one work from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division) Panipat Naphtha Cracker,

Panipat (Haryana)

Report No.

Page 1 of 1

AAL ENV-20240604024, AAL ENV-20240607034, AAL ENV-20240611023, AAL ENV-20240614034, AAL ENV-20240619022, AAL ENV-20240622070,

AAL ENV-20240625033, AAL ENV-20240628024

Date of Reporting:

04/07/2024

Sample Description:

Ambient Air Quality Monitoring

Sampling Method:

IS:5182 (Part-14)-2000

Work order Item:

Panipat Refinery (Table-D)

Sampling Duration:

24:00 Hrs AAL

Sampling Location:

Roof of Administration Building

Sampling Done By:

TEST RESULTS

	Parameters -> c of Sampling4	PM _{1.5} (ugm ¹)	PM ₁₀ (ug/m²)	SO ₂ (μμ/m²)	NO ₂ (µg/m ²)	CO (mg/m²)	O ₃ (pg/m ³)	NH ₃ (agrae')	P5 (µg/m²)	C _k H _k (ug/m ³)	As (ng/m²)	Ni (ng/m²)	B(u)P (ng/m²)
1	03/06/2024	43,2	83.9	10.6	18.2	0.95	28.4	21.7	ND	0.95	ND	ND	ND
2	06/06/2024	45.4	80.5	12,3	21.8	0.96	30.2	23.5	ND	0.98	ND	ND	ND
3	10/06/2024	40.9	78.2	9.8	20.5	1.05	27.8	22.3	ND	1.05	ND	ND	ND
4	13/06/2024	42.5	81.7	11.4	19.6	0.85	28,8	23.2	ND	0.96	ND	ND	ND
5	18/06/2024	44.3	85.8	12.7	21.3	0.90	30.2	20.9	ND	1.10	ND	ND	ND
6	21/06/2024	40.8	79,6	10.9	22,7	1.08	26.2	21.5	ND:	1.12	ND	ND	ND
7	24/06/2024	41.3	78.1	13;4	20.5	0.98	283	20.6	ND	0.90	ND	ND	ND
8	27/06/2024	45.1	83.5	10.2	19.8	0.91	30.3	22.7	ND	1.15	ND	ND	ND
Ť	Maximum	45.4	85.8	13.4	22.7	1.08	30.3	23.5		1.15			
T	Minimum	40.8	78.1	9.8	18.2	0.85	26.2	20.6	4	0.90			72
	Average	42.9	81.4	11,4	20.6	0.96	28.8	22.1	-	1.03			100
NAA	Q Standard	60	100	80	80	2	100	400	1	5	6	20	- 4
(est	Micthod	15-5182(P- 24)-2019	(5-5182(P- 23)-2006	15-5142 (P-7)-2001	15-5103cF- 61-3006	15-5162(P- 10)-1999	IS-5183(P- 9)-1974	15-5182(P- 26)-3818	15-5182(P- 32)-286a	15-5182(P- 113-2006	15-51432P- 213-2004	AALSOP ///08	19-5182(P- 12)-2004

End of Report

NAADY National Ambiest Are Coulde product ND-Not Depended DL Describer Limit.

Load for Pet - 0.1 agric. "Notes (on No. 1. th egine", Areans (or Ax) - 1.0 ogons, National Country College Country Surgers Analyzed within scientifics of within the date of sampling.

Authorised Signatory

The Result indicated above refer to the tested sample and insted test parameters only, endorsement of products is noither interest not implied.

Total liability of our laboratory is limited to the invoice arrount.
This report shall not be reproduced wholly or in part without written consent of the laboratory.
This report shall not be used in any advertising media or as evidence in the court of the without prior written consent of the laboratory.

The non-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the data of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aaikundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page 1 of 3

Issued To:

Ms Indian Oil Corporation Limited

(Refineres Division)

Panipat Naphiha Cracker, Panipat (Finryana)

Stack Emission Sample Description: Sampling Method: 15:1.0355

Work order frem: Pampar Refinery & PX-PTA (Table-ti & M) Report No. AAL ENV-20240131020

Date of Receivings Date of Startings

31/01/2024 31/01/2024 05/02/2024

Date of Completion; Date of Reportings Sampling Done By:

05/02/2024

AAL

STACK DETAILS

SN.	Date of Sampling	Detail of Stock	Ambient Temp.	Stack Temp. (°C)	Stuck Din. (m)	Stock Height (m)	Flue Gas Velocity (in/sec)
8	1,7/01/2024	HB/5G-01	18	162	10.0	65	10.13
2:	12/01/2024	16E8G-02	13	147	3,3	70	9,45
3.	47/01/2034	FBR2G-03	18:1	137	3.3	70	934
41	17(61)2024	FUESG-04	7.01	132	3.3	70	9.53
1	18/01/2024	10050-05	19	158	3,3	7865	9.87
6	18/01/2/201	CPP-VIII-13	18	147	3.34	100	9.63
7.	18/04/2024	U#-91	16	156	3.04	100	9,74
ж.	18/01/2029	110-02	18	148	3.04	100	9.65
100	-H/0122034	OHOU-ING Heater	18	198	2.42	63	10.35
10	19/01/2024	OHCU-LP Section	19	1145	2.42	365	79.60
ii.	1900/2023	DECOM Studi	1.8	221	1.25	160	3036
12	2004/2024	CCRUSHI (femoriff 10)	18	201	1.54	60	9.86

TEST RESULT

SIN:	Date of Sampling	Detail of Stacks	Parti		Sulpi	ur Diox (SO ₁)	ide	Oxid	Ic of Nitre (NOs)	gen	Carbo	m Mone (na CO)	xide	Nicket d	Ni & V	
	Harriston	United	Only (No. of	Thu/	mathing	2011	3450	HW/F	aprel .	- Aprile	SHW/HH!	(bline	Nafter.	multiple.	HITT:	haft
10	12/01/2024	FIRESCI (II)	92	1,91	1/2	2:63	1.30	2013	115.59	49.54	3,2	2.56	0.67	80	13	ż
4	(20022024	10050-03	7.5	7131	13	2.76	1:59	169.8	12.41	34,12	-3/4	2.72	0.88	:ND		10
ž.	1701/2024	10/50/01	6.9	145	76	337	1.53	182.5	86.80	37.67	2.1	224	0:37	ND		(A
	1500112024	Hitscau	6.2	1,50	1,3	256	134	173.4	84.46	36.46	33	2.80	0.74	ND	14:	1
67	DE OF 29134	lossis-ile	714	151	7.4	2.48	1.45	190.7	10.89	30.84	33	2.64	8.67	ND-	0	
0	88/01/202d	CPP-VIII-1	7.6	139	7/1	2.48	1.49	218/9	100.62	45.94	32	2.35	0.69	160	120	
	18(91/2) 26	:00:91:	183	1,39	10.9	2:67	1011	298.1	181,56	35.80	54	432	9.93	NO		
N	180002024	1/16/02:	8.5	1,48	Wiff	3,36	1,67	20k3	99,51	35.48	4.9	3,92	0.85	ND	555	-
ŏ	100000000	DHCL-IIII	8.4	0.8%	1217	420	136	1061	01.41	335,196	(1)A)	9.44	1.23	NO	000	
10	10/01/3/154	CHULP Securi	69	0.73	0.3	3.93	1.25	1262	392.04	13.38	187	14.9%	3074	3ID	1	13
ź1	19/01/2024	ENHOS Store	5.9	145	87	3314	170	84.2	41.16	16/48	43	344	0.84	ND	-	
Ŧì	20/01/2029	CCRLINITE Henry-St 101	.83	0.38	38	2.97	934	112.7	5430	4.55	-18	4,24	9.72	3403	-	
	witsalble Gents	Gas		67.		50		100	350			150	- 0		1	
	(mg/Nm ³)	Report	1	190		1700			450		167	200			5	
	Month Rouse	FCCU		-	The second				T 3			400		111	12	

ASHUTOSH SRIVASTAVA

Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, encorsement of products is neither inferred not implied

2. Total liability of our laboratory is limited to the involve amount.

3. This report shall not be reproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the count of law without prior written consent of the laboratory.

5. The non-penshable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Hervana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page 2 of 3

Issued To:

M's Indian Oil Corporation Limited

(Reformer Envision)

Pumpat Naphrita Cracker, Partipat (Haryana)

Sample Description: Stuck Emission 18:11:255 Sampling Method:

Wark order Hemi Pampat Refinery & PX-PTA (Table-E & M) Report No. AAL ENV-20240131620

Date of Receiving:

31/01/2024 31/01/2024

Date of Starting: Date of Completion: Date of Reporting:

05/02/2024 05/02/2024

Sampling Done Byz AAL

STACK DETAILS

S/N	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Dia.	Stack Height (m)	Flue Gas Velucity (m/sec)
18.	26001/20034	CCBU NHT Hance-FF 261	19	223	234	70	10.09
19	20/01/2024	CCRU NHT Hoper FF 203	19	249	2.34	70	10.58
T#:	30/01/2024	RECC CO Boder	18	158	2.1	67.	10.51
16	26/03/2024	RFCC Feed Hener	18	182	2.1	67	10:03
19.	10/01/2024	HOU-DES	18	130	1.7	60	9.44
15	24/01/2024	HOU-76	19	146	2.4	60	9.45
19	24/01/2024	1100-77	18	149	3.4	60	8.94
30	24WH/202H	AVUS0	48	129	5.1	1420	9:25
21	27/01/2024	AVOIDE	19	119	5.1	1:00	9.31
22	27/01/2024	MSQ Prime G-301-H-101	18	196	1.64	60.	9.43
91	22/61/2024	MSQ Prime (4-10)-H-201	18	218	1.64	60	14.9
24	21/01/2004	NSQ Form G-303-11-301	18	212	1.64	60	9.56
		THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLU	LITTE .		1000	Part 11	1315011

TEST RESULT

N'N	Date of Sumpling	Detail of Stack-l	Mutte	ulaty (PM)	Sulp	mr Dios (SO ₂)	ide	Oxid	le of Nitro (NOx)	在 年4	Carte	m Muno (as CO)	aide.		& Van s Ni &	
- 1		tinii->	midlet	Halle	SHUTTER	:199	kjene	.100/TVm*	30001	:Nafe:	HG(ZF)HT.	16tim	. kg/se	HighNeit*	(9)19	hi/W
(X.)	2010137024	CORLINATE Henry FF 101	8.1	0.76r	10.008	3/32	0,97	110.9	34.07	10.13	23.7	18.95	2:16	NE		3
M	26.63/2024	CUMU SHIT Home-FF 205	9.3	0.83	100	3.00	0.53	108.4	51.80	9.84	23.6	116.6%	2/14	NID	-25	
14	300013034	Boder Boder	9.3	11.86	12.1	124	1.67	253.4	24.72	1533	377	43.76	10.34	ND	14	-
IE.	2.01.04	RPCC Feed Harrier	8.1.	0.63	11.5	265	1.65	104.7	53.05	8.05	62	4.96	0.49	ND		
帽	3451/7024	H20-535	7.2	0.46	- 67	3.04	9,44	963	0.87	5.00	2,2	4.60	0.29	ND	82	13
10.1	Z0.01/2024	FROM N	7.3	7,56	7.8.7	276	1.62	146.8	71:51	33.39	4.7	2.76	1.00	ND	177	-
14:	34647034	3300/270	無!	1,63	3.9	-3.11	1.79	102.4	102.51	74.03	3.9.	3.92	0,98	ND.	12	- 5
20)	24051/2004	AVU/c2	6.8	3.09	F890	3.02	4.27	100(5)	51.88	52.30	,4,3:	55.90	2.21	NDU	150	3
21	2101.0024	AVURE	16.36	1.88	390	256	1.65	1143:	55.67	24.85	43	5.44	0.93	ND:	15.0	354
25	21013024	MSt2 IVone G- 3/11-04-101	4.6	8.20	175:	6.16	0.78	12(0)	60.82	5.53	153	11.12	0.63	NO	12	50
	274V/2024	Mary Prime Ci- \$55-06-201	4.0	121	19.7	6.79	11.84	116.5	50.75	3105	18.5	14.80	0.80	3613	3	3
34:	27/01/2834	Address dronner Ca- 20/A-M-2001	22	0.23	14.5	6.57	976	1 (2.9	5434	4,92	17.1	13.6%	127	ND	152	1
Penn	nissible limits	Gan		(R)	7	50		150	350			150				
- (mg/Nm²)	liquid	18	00	155	1700			450		100	200			- 5	
	SE-NII Wellerini	FCEI			2.5	21	2.17	100	-			400	Line	2	A	_

Authorised Signatory

The Result indissited above rater to the tested sample and listed test parameters only, endorsement of products is heither inferred not implied.
 Total liability of our laboratory is limited to the invoice amount.
 This report shall not be repestuced wholly or an part without written consent of the laboratory.
 This report shall not be used in any devertibing media or as evidence in the court of law without prior written consent of the laboratory.
 The root-pershable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of leave of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST CERTIFICATE

Page 3 of 3

boned To:

M's Indian Oil Corporation Limited

(Refinered Division)

Partiput Naphtha Cracket, Puniput (Haryuna)

Sample Description: Sampling Methods

Stack Emission 18:11255

Work order from: Partigut Refinery & EX-PEA (Table-E & M)

AAL ENV-20240131020 Report No.

Date of Receiving:

31/01/2024

Date of Starting: Date of Completion: 31/01/2024

Date of Reporting: Sampling Done By: 05/02/2024 05/02/2024 AAL

STACK DETAILS

100	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp. (°C)	Stack Din.	Stack Height (m)	Flue Gas Velocity (m/sec)
25	27/01/2024	HCU Sinck	19	127	1.3	70	9,57
26:	29/01/2024	DHET-M-01	18	DIA	1.8	70	9.64
27	:29/01/2024	DHDT-H-02	18	224	1.8	7.0	9.76
231	36/01/2024	FX-TollingT	19	198	E26	56	10.02
20	30/01/2024	PX-Entory	19	153	1.2	56	9.53
*	30/01/2004	PX-Xylenc	18	147	2.6	58	8.92
31	JW01/2/024	PX-CCR	19	175	1.9	100	9.24
44.	30/01/2024	PASSIT	19	123	1,0	30	10.83
33	31/01/2024	PEA-blet Cul-Huater	1.5	129	2.35	60	9.16
34	31/01/2024	RTA-ECES:	18	132	235	60	8.93
35	31/01/2024	PTA-Thornal Children	38	110	205	00	8.55

TEST RESULT

						ATTENDATED AND										
ex.	Date of Sampling	Detail of Stacks	Partie Matte	et(liste r (PM)	- 55	hur Diox (SO ₂)		Ovid	(NOx)	gen	- 14	on Mono (as CO)	xide:		& Van	
		Unit-s	eng/Nati	Lybr	mag Ster.	light.	Nyte	May Plane	3000	kg/m	- Shart	pps.	ight	mgriver	2gm	-83/4
35	27/01/2024	HCU 5a≥k	52	0.17	-5,8	2.23	0.20	119.3	58.30	3,97	#.1	3.28	-2.09	386	200	- 3
4	29/04/02/4	DHOST-IN-III	5.1	0.28	368	4.13	0.62	£18.7	62.69	6/72	43	334	0.22	889	5	13
	29/01/2024	DH01-0-01	48	623	16.5	335	9.53	(93)	A4.92	2.95	19	312	9.20	1465	- 2	3
TS.	No trainer	PSA men	33	0.11	18.5	6类。	0.46	146.3	51.78	2.67	42.7	34 16	NAME:	NO	7	1 3
26	30mm/2024	Relian	6.8	0.88	15	£16	0.21	92.9	4525	2.45	10	100	20	NO	11.	3
31	30/01/2024	PM-JCylers	10	0.55	2.5	3.69	961	1193	38,71	8.33	NR:	108A	-0.E	Nti	-	1
11.	30/01/2024	Ov-cocit.	4.6	0.50	76	266	0.46	96,2	46.25	3.84	5.8	4.64	935	pita	1	
HR :	30001/2024	PX-8901	84	9.19	16,19.	241	0,15	102.5	49.92	2.30	6.9	1,52	0.13	ND	*	0
ХЭ	33/01/2924	PESSIN Cu-	6.9	6.72	32.7	31,44	3:37	40,1	31.19	4,49	ND	38	8	500	34	- 2
54	\$1007/2034	BARCH	2.1	631	728	2.46	0.76	-137.1	61.97	12.79	ND:	191	3	ND.		10
10	31/01/2024	FFA-French Under	7.8	E-98.	(6)8	(0)81	70068	29.4	18.52	2.99	3.6	2.68	9,16	SID	10	Pie
	nissible limits	Gas		8		50	100		380		-	150		100	-	
0	mg/Nm*i	Barrist	0,1	00		1500		-	450			200			5	
		FCCU				1.6			1			400			7	

""End of Report"

Tent Method: - Parsentine Mutter (as P04) Es 1 (255(P-1)-1985, Suiphi- Dioxide (as SO₂) Es 1 (255(P-2)-1985, Oxide of Nitrogen (as NO₂) Es 1 (255(P-2)-2015, Carbon Monoxide (on CO) IN 13270-1992, Niekel & Vanidium USEPA Method 29 by AAS

> ni Mameria Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither intered not implied

The Result indicated above rater to the rested sample, and issed test parameters only, endotherment of products as neither interned isst imperiod. That is about that not be reproduced which or in part without written consent of the isportation.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the isportable sample received shall be destroyed after one morth and pershable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page 1 of 1

Issued To:

Sampling Method:

M/s Indian Oil Corporation Limited

(Refineries Division) Panipat Naphtha Cracker,

Panipat (Haryana)

Sample Description: Stack Emission

Work order Item: Paniput Refinery (Table-F)

18:11255

Report No. AAL ENV-20240131021

Date of Receiving:

31/01/2024

Date of Starting:

31/01/2024

Date of Completion:

05/02/2024

Date of Reporting:

05/02/2024

Sampling Done By:

AAL.

STACK DETAILS

SIN	Date of Sampling	Detail of Stack	Amblent Temp.	Stack Temp. (°C)	Stack Dia.	Stack Reight (m)	Flue Gas Velucity (m/sec)
1	31/01/2024	SRU-36	19	165	1.9	70.0	10.49
2	31/01/2024	SRU-57	19	167	1.9	70.0	10.67

TEST RESULT

S/N	Date of Sampling	Detail of Stacks	Sub	(SO ₂)	ide	Oxid	(NOx)	gen	Cart	on Mono (na CO)	11111111		ogen Sul (as H ₂ S)	
		Unit-s	mp Nort	ppin	kg/br	ing/bloid	ppe-	kghr	ngNie?	ppm:	light.	mg/Nin*.	ppm	3g/bi-
T	31/01/2024	80026	le3	49.77	10.09	46.5	22.63	130	65.1	52 QN	4.62	ND	ND	ND
	31/01/2024	SRU-57	1493	\$2.70	10.74	443	21.58	3,13	68.9	55.12	4,95	ND	ND	MD
	nissible fimits (mg/Nm.l)			108	9/11	l RVA	350			150			15	

Total Mindian - Sulphur Diesade (pt 51); 13 (12550-2) (1985; Oxida of Nerrigen (pt 56);) 15 (12550-7) (2905; Carbon Minney de (pt CCF) 25 (1275-1992; Ill-diesast Sulphula (b) SV IS (1225) (-1) (1250).

UTOSH SRIVASTAVA Authorised Signatory

The Result Indicated above refer to the tested sample and issled test parameters only endorsement of products is neither inferred not implied. Total liability of our laboratory is limited to be invoice amount.

This report shall not be reproduced witch or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory. Note: 1

5. The non-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified.

^{**} End of Report **



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page 1 of 1

besurd To:

M's Indian Oil Corporation Limited

(Refineries Division) Panipis Naphtha Cracker, Panigut (Haryana)

Sample Description: Sampling Methods

Stack Emission

Work order Hem:

1B:11244

Pumpit Referery & PX-PTA (Table-E & M)

Report No. AAL ENV-20240201013

Date of Receiving: Date of Starting:

01/03/2024 01/02/2024

Date of Completion: Date of Reporting:

05/02/2024 65/02/2024

Sampling Done By:

AAL

STACK DETAILS

N.N.	Date of Sampling	Detail of Stack	Ambient Temp. (°C)	Stack Temp, (°C)	Stack Dia.	Stuck Height (m)	Flue Gas Velocity (m/sec)
):	0.1/02/2834	DCU Hotec	20	140	3	70	9.55
1	01/02/2024	DHDT-BS V) (New-107)	30	134	1.8	70	E.78
3:	01/02/2024	HGLI-BS VI (New-106)	20	129	3.4	59.7	9.43

TESTRESULT

SIN	Date of Sampling	Detail of Stacks	27/27/12	culate r (PM)	Sulp	(SO ₂)	side	Oxio	(NOx)	ogen	1	on Mono (as CO)		Nickel (#	& Vana s Ni &	440
		Limit->	Hall-M	Sapor	Rig/Line	Anthon	\$plis	ing/hpt	2010	ky/te	engineer.	CONT.	ag/a	market	pp.	\$45/bi
1	WH92/28242	DCCUMAGO	K5	1.45	163	2.27	2.83	179.4	69.03	22.09	6.5	5.20	1,71	NE	8.	100
77	61/02/2014	EHIOT-85 Vi (New-1971	42	9.24	30	283	0.46	142.5	70.98	8.97	7.0	6:32	0.45	NO	Ó	22
3/3	61:02/5024	##(U-8/5 V) (Nov-106)	4.9	1,49	9.5	1.56	233	99.2	47.55	20:61	1.7	6.90	1.93	ND		1
Peri	nissible limits	42mi		II .		30			350			150	315			
1	(mg/Nm²)	liquid	1	00	04	1700		10	490		100	150.	3	5		
	(0)	ECC1/		-		100				7794	200	460			15	

ACT THE PERSON

** End of Report**

Ten Mathest - Purnishing Mateer (m. 194). IS 11256(P-1)-1983, Salphin Lipscote (m. 5C₂). IS 11255(P-2)-4983, Ocale of Stronger (m. NO₂) IS 11255(P-7)-2865, Curbon Morrovale (m. CUT) IS 1225-1992. Nickel & Vanctum SSEPA Method 29 by AAS.

H SRIVASTAVA Authorised Signatory

Note: 1. The Result Indicated above refer to the truted sample and hand test parameters only, endorsoment of products is neither inferred not implied.

2. Total fluidity of our taboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the saboratory.

This report shall not be expreduced wholly or in part without written consent of the saboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the taporatory.

The non-perishable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division) Partiput Naphtha Cracker,

Date of Receiving:

27/02/2024

Panipat (Haryana)

Date of Starting: 27/02/2024

Report No. AAL ENV-20240227018

Date of Completion:

02/03/2024

Stack Emission IS:11255

Date of Reporting:

02/03/2024

Sampling Method: Work order Item:

Sample Description:

Panipat Refinery (Table-F)

Sampling Done By:

AAL

STACK DETAILS

2.7	Date of Sampling	Detail of Stack	Ambient Temp. (°C)	Stack Temp.	Stack Dia. (m)	Stack Height (m)	Flux Gas Velocity (m/sec)
1	27/02/2024	SRU-57	26	171	1.9	70.0	10.72

TEST RESULT

SIN	Date of Sampling	Detail of Stocks	Sut	pline Dina (SO ₂)	de	Oxid	(NOx)	gen	Cart	(as CO)	side		geo Solj (m 1158)	thide
		Unit-s	mg bimt	ppa	kpfer	mpNm ⁴	thin	kgðu	mg/km²	ppm	Sple	mg/Nm ⁴	pipio	kathi
A.	27/92/2924	SRU-57	143.7	80.26	10:27	49.2	23,96	3.52	61.5	49.20	4:40	NO.	ND	ND
5.33.4	missible limits mg/Nm3)		17	NS			350		JA	150			. 15	

End of Report

Total Method: - Salphur Diovale (no SO) 15-11255(0-2)-1985. Oscide of Norwagen (as: NO.) 55-11255(P-7)-2003; Cartion Miniotide (as: CO) 15-13270-1992; (1) division Sulphide (1(5)) IS 1 (255(P-4)-2005.

> DSH SRIVASTAVA Deputy Technical Manager

Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.

Total liability of our liaboratory is limited to the invoice amount.
This report shall not be reproduced wholly or in part without written consent of the laboratory.
This report shall not be used in any advertising media or as evidence in the count of law without prior written consent of the laboratory.

5. The non-perishable sample received shall be destroyed after one month and penishable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email ; aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 3

Issued To:

M/s Indian Oil Curpuration Limited

(Refinence Division)

Pampat Naphtha Cracker, Pampar (Haryana)

Sample Description: Sampling Method:

Stock Emission

18:11255

Work order Hem: Paropat Retinery & PX-PTA (Table E & M) Report No. AAL ENV-20240823022

Date of Receivings Date of Starting.

23/03/2024 23/03/2024 30/03/2024

Date of Completion: Date of Reporting: 30/03/2024 Sampling Done By:

AAL

STACK DETAILS

S/N	Date of Sampling	Detail of Stack	Ambient Temp, (*C)	Stack Temp.	Stuck Dia.	Stack Height	Fine Gas Velocity
	11/05/2024	HRS(7-0)	32	169	335	65	10.46
2	11/03/2024	HRSG-92	32	136	3.3	70.	981
3	11/09/2024	HBLSG-05	32	168	13	76	9.91
4	12/03/3034	CARANDO	32	134	3.34	100	9.78
.5	11/03/2034	UH-01	32	161	3.04	100	9.86
6	11/03/2024	UNIO	32	156	3.04	100	9.81
7	23/03/2024	OHCU-RG Heaten	33	205	2.42	63	10.39
8	23/03/2024	OHCLI-EP Section	93	132	2.42	65	9.84
9	19/03/2024	DHDS Stack	33	230	1.25	60:	10.35
101	15/03/2024	CCRU NHT Heater-FF 101	13	218	1.54	60	10.22

TESTRESULT

SIN	Date of Sampling	Detail of Stack 1	Partie Matte	culate r (PM)	Sulp	hur Din (SO ₁)	xide	Oxio	le of Nitro (NOv)	gen	122,111,277	nn Mune (as CO)	A Address bed	Nichel e	& Vano	
		Unit->	(5/m²	N/APA	#9675am	3910.	- kg/hr.	mghth	thun:	kjeto	mg	200	- 6g/m	million	2000	145
1	11/03/2024	HR5(1-tr)	8.9	1.88	18.7	2.04	1.84	231.5	112:70	45.91	3.6	3/94	0.30	Mb	1	-
Ŕ	11/03/2004	HIGG-62	81	1.65	7.5	2.62	1.52	172.4	- KE92	35,19	3.6	2:88	0.73	80	2	-
ž	17/03/2024	HRSG-05	8,3	1.68	7,9	2.76	1,60	1824	88.85	36(82)	3.7	2.96	0.75	(23)	H-	-
4.	13/03/2024	CISAVIIISA	2.9	1.66	3 //	2.06	1.30	209.5	107.10	43.81	1.8	3.564	0.85	ND	ž.	E
5	11/03/2024	108-01	18.8	132	0.2	1.22	138	1983	V6:59	34.10	3,0	4/72	192	bitz	7	-
ě	11/03/2024	D16-02	29	VED:	10.4	1.60	1.78	213.6	104.04	37.00	5.8	4.92	0.94	ND:	5	553
T	21/03/2024	Officti-RG Bester	3.0	5.61	13.8	4.72	1.40	120.4	58.65	12.52	10.3	8.24	1.07	ND:		
F	23/03/2024	ORCU-LP Section	7.0	G.85	10.3	3.60	113	/127,5	:67.10	14.18	10.6	13,38	(1,05	MD.	F	100
8)	19993/2024	DHIDS Stock	6.4	0,17	0.5	3.32	0.25:	189.2	3033	235	430	3.92	0.(1-	NDC	100	
93	18/03/2024	CCRU NUT Being-FF100	8.7	(2:31)	92	1.22	0.32	0.1925	58.31	4.84	8.6	6368	635	ND		16
	missible limity	Gas	38	3		30			350			150			-	
	(mg/Nm²)	Figuid	10	10		1700		100,0	450			200			5	
	No. 11 Second	FCCU				20						400			-	



Authorised Signatory

Note: 1. The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.

2. Total listolity of our laboratory is limited to the involve amount.

3. This report shall not be reproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

5. This non-periphiable sample received shall be destroyed after one month and perishable sample shell be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 2 of 3

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipar Naphtha Cracker, Panipar (Haryana)

Sample Description: Stack Emission Sampling Method: 15:11255

Pumpat Refinery & PX-PTA (Table-E & M) Work order Item:

AAL ENV-20240323022 Report No.

Date of Receiving:

23/03/2024

Date of Starting:

23/63/2024

Date of Completion: Date of Reporting:

30/03/2024 30/93/2024

Sampling Done By: AAL

STACK DETAILS

S/IN	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Dia.	Stack Height (m)	Flue Gas Velocity
11	18/01/2024	CCRU NHT Hemer-FF 201	32	240	234	76	10.25
12	18/03/2024	CCRU NHT Heater-FF 205	33	258	2.34	>30)	10,43
13	21/03/2024	HGU-PDS	33	143	1/2	60	9.23
14	21/03/2024	HGU-76	- 33	154	3.4	50	0.33
15	21/02/2024	HGLI-77	33	157	3.4	50	9.02
16:	19/03/2024	AVU-01	22	128	5.1	100	9.23
12	20/03/2024	MSQ Prime G-301-H-101	33	207	1.64	60	10.10
18	20/03/2624	MSQ Prime G-303-H-201	33	229	1.64	68	9.65
19	20/03/2024	MSQ Prime G-303-H-301	33	224	1.64	-602	9.60

TEST RESULT

503	Date of Sampling	Detail of Stack4	Parite Matter	11 195 Serve	Solp	hur Dias (SO ₂)	ide:	Oxio	(NOx)	gen	Cart	on Monn (as CO)	xldr		di Van	
		Unit→	Hig Diner	katte	mg/25m²	ther-	kgite	http/b/m²	- Japans	Barber.	myster	Shut	hight	mg/Km²	ppm	3 g/br
11	18/03/2024	CCRD MHT Heater-FF 201	8.6	1.80	9.1	3.18	0.82	117.3	27.14	10.53	21.6	17.28	2,94	NE	. 5	/8;
12	18/03/2024	CCRU SHIT Homor-FF 205	8.5	0.75	9.6	3.36	0,83	112.2	34.65	9.90	29.8	15.64	1,83	MD	13	2
13	21/03/2024	HCHI-PIXS	31.1	9.43	9.2	3.22	0.48	96.8	47.15	5.09	76.7	5.12	0.54	NO	91	-
14:	21/00/2024	365U-76	3.9	1.04	83	2.97	1.76	137.6	67.92	28.51	5.3	124	1.0	Nb	(a)	7
15	21/05/2023	HOUST	8.9	1.77	9.6	3.36	1.81	174.30	83.00	04.72	9.6	4.64	1.15	NED	4	2
16	19/03/2024	AVU-01	27.	3.28	1.80,1	2.83	3.98	129.7	63.48	63:10	4.8	3.84	2.36	- NE	14	-
17	29/03/2024	MSQ Prime Gr. 301-H-101	4.90	0/23	1836	335	0.71	121.7	59.28	5 65	14-3	11,50	4.67	NO.	•	14
18	20/03/2024	MSQ Pring G- 303-H-291	4.7	0.23	22.7	2.94	6.96	110.2	53.68	4.67	16.6	13.44	0.74	1900	-	100
19.	20/03/2024	MSQ Prime G- 303-H-301	4.8	9/88	28.4	7.14	0.87	110.3	50.65	4.96	18,5	24.64	0.78	ND	3	50
	nessible limits	Gas:	1)			50			350			150				
3	(102/7111)	liquid	107	û		1700	- 0		450		-	200			5	
	BEREICON	FCCU										400			14	

OSH SRIVASTAVA Deputy Technical Manager

Authorised Signatory

The Result Indicated above refer to the tested earnpie and listed test parameters only, endorsement of products is neither inferred not implied total liability of our laboratory is timited to the invoice amount. This report shall not be reproduced wholly or in part without written consent of the laboratory. This report shall not be used in any advertising media or as evidence in the court of law without piec written consent of the laboratory. The non-penshable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of report unless apecified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

Page 3 of 3

Issued Too

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker, Panipat (Haryana)

Sample Description: Stack Embision Sampling Method: 15:11255

Work order Item: Pumput Refinery & PX-PTA (Table-E & M) Report No. AAL ENV-20240323022

Date of Receivious:

23/03/2026

Date of Starting: Date of Completion: 23/03/2024 30/93/2024

Date of Reporting: Sampling Done By: 30/03/2024 AAL

STACK DETAILS

50	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp. (°C)	Stack Dia.	Stack Height (m)	Flue Gas Velocity
20	22/03/2024	DHDT-H-03	33	232	1.5	70	9.68
21	22/03/2024	DHDT-H-02	33	233	1.8	70	9.71
32	13/63/2024	PX-tacmer	32	268	1.2	36	19.45
23	19/03/2024	PX-Tatory	32	160	1.2	(56)	9.68
24	13/13/2024	PX-Xylene	.32	455	2.0	58	8.91
25.	14/05/20124	PX-CCR	32	186	1.9	100	9.60
26:	34/03/2024:	PXANHT	32	134	1.0	30	10.86
17:	£5/03/2024	PTA-Hot Oil-Fleuter	32	138	2.35	50	9.08
28	#3/03/2024	PTA-FCPH	- 32	143	2.33	60	9:05
20.	22/03/2024	DCU Hemer	33	151	- 3	70	9.75
341	23/03/2024	HGU-BS VI (New-106)	78	135	3.4	59.7	9.40

TEST RESULT

S/N	Date of Sampling	Detail of Stacks		culate r (FM)	Sulp	hor Dia: (SO ₂)	dde -	Oxio	le of Nitro	gen	Curb	on Mone (as CC)	CHILINE		& Van	
		Unit	maNm	64.9	mg/Ner*	agus	No. in	Trp 7+In*	88.00	kgifte	mp/bins	Tipin	kg/hr	mp/Nes*	- Oliver	habe
29	22/03/2024	DHICK-H-01	6.5	0.33	13:2	4.62	0.61	134.5	65.51	X 103	477	176	924	NO		-
21	22/03/2024	0007-0-22	53	0.13	116	4.66	0.27	128 7	53.18	3.91	4.2	236	0.10	ND	8	-
22	15/03/2024	PX-Isoma	5,8	0.13	31.1	745	0.47	1164	30.70	0.70	49.3	3846	71.18	ND	Α.	1
23	13/03/2024	Px-Telesy.	6.3	0.17	JR.5	2.91	0.22	96:2	146/80	2.54	NCE.	1985	-	ND	-	
24	13/03/2024	PESSylene	87	0,59	8.1	2.83	0,55	124.3	260.33	W.49	NEY	100	12	NED		12
25	14/03/2024	EXCCH	9.2	9,57	4.7	3.04	0.54	90.4	344.93	5:60	0	4.96	0.38	NE		H
26	14/03/2024	ex-surt	-81	0.18	7.8	2.73	0.027	109.3	53.24	2.30	12	E.76	0.16	ND	+	7
77	15/03/2024	PTA-Hot Dil- lenter	7.5	0x 803	28.9	10 11	3.04	49.1	23.92	3.24	Кb			1403		3
28	15/03/2024	PLA-FCPH	7.5	0.75	8.2	2.87	9.81	134.6	69,36	13/27	ND	-	5.1	1900		.18
200	22/03/2024	DCU Hossir	7.8	1.32	15.3	5.33	2,40	126.5	58.69	20.45	1,2	1.70	1.22	KO	8	3
30)	2,50,02034	HGC-B5 VI (New-106)	4.4	0.96	8.5	2.97	1.89	165.5	5) (8)	22,09	7.8	0.25	3.70	300	-	8
	missible limits.	Gais	1	Q.		50			350	- 17		150				
1	(mg/Nm²)	Diquid	16	10	100	1700			450			300			5:	
	GENERAL MARKETON	FCCU	0	51		*			TEL	HOW I		400			12	

**End of Report*

Test Method: - Particulate Matter (as PM) 18 11255(P-1)-1985, Sulphur Dioxide (as SO₁) IS 11255(P-2)-1985, Oxide of Nitrogan (as NO₂) IS 11255(P-7)-2005, Carbon Monoxide (as CO) IS 13270-1992, Nickel & Vanadium USEPA Method 29 by AAS

> TOSH SRIVASTAV De Authorised Signatory

 The Result indicated above refer to the tested sample and listed test perameters only, endorsement of products is neither inferred not implied.
 Total liability of our liaboratory is limited to the invoice amount.
 This report shall not be reproduced wholly or in part without written consent of the laboratory.
 This report shall not be used in any edvertising media or as evidence in the court of law without prior written consent of the laboratory.
 This report shall not be used in any edvertising media or as evidence in the court of law without prior written consent of the laboratory.
 This non-pensionable sample receivers shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker,

Panipat (Haryana)

Sample Description:

Stack Emission

Sampling Method: IS:11255

Work order Item: Paniput Refinery (Table-F) Report No. AAL ENV-20240328009

Date of Receiving:

28/03/2024

Date of Starting:

28/03/2024

Date of Completion:

02/04/2024

Date of Reporting:

02/04/2024

Sampling Done By:

AAL

STACK DETAILS

SiN	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Dia, (m)	Stack Height (m)	Flue Gas Velocity (m/sec)
P.	27/03/2024	SRU-26	32	173	1.9%	70.0	(0.67
2	27/03/2024	SNU-37	32	176	1.9	70.6	10.70

TEST RESULT

SAN	Date of Sampling	Detail of Stack↓	Sul	place Dies (SO ₂)	ide	Oxid	(NOx)	gen	Curt	(as CO)			ogco Sul (as H ₂ S)	
		Unitro	mg/sm²	Spins.	Aghr	mg/bins*	ypo.	kgbr	mag/Sami	rum:	Suche	mu/Nor*	2900	Algebra
1	27/03/2024	SRU-26	149.8	52.40	10.61	32,3	25,47	3,70	58.9	47.12	9.37	NEX	ND.	ND
2	27/(3/2024	SRL-57	1451	50.75	10.24	48.6	23,65	3.43	63.2	50,56	4.36	ND:	ND	2015
	nisside linitu mg/Nm3)	77 8		NS			350		/	150			15	

Test Merlant - Sulphur Draxide (as SCh) (5.11255;P-2)-1685; Chelse of Nitrogeo (as NO₄) IS 1.1255;P-1)-2005; Cathin Manazada (as CO) IS 13570-1992; Hodoseput Sulphule (1),5) IS 11255;P-4;-2005;

TOSH SRIVASTA Deputy Technical Manager

Authorised Signatory

Note: 1. The Result Indicated above rafer to the tested sample and listed test parameters only, and becoment of products is neither inferred not implied.

2. Total liability of our laboratory is limited to the invoice amount.

3. This report shall not be seproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

5. The representative sample received shall be destroyed after one month and personable sample shall be destroyed after one week from the date of issue of report unless specified.

[&]quot;"End of Report""



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division) Panipat Naphtha Cracker.

Panipat (Haryana)

Sample Description:

Stack Emission

Sampling Method:

IS:11255

Work order Item:

Panipat Refinery (Table-F)

Report No. AAL ENV-20240430010

Date of Receiving:

30/04/2024

Date of Starting:

30/04/2024

Date of Completion:

06/05/2024

Date of Reporting:

06/05/2024

Sampling Done By:

AAL

STACK DETAILS

SIN	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp. (°C)	Stack Dia.	Stack Height (m)	Flue Gas Velucity
1	29/04/2024	SRU-26	37	179	1.9	30.0	10.57
2.	29/04/2024	SRU-57	37	181	1,9	70.0	10.68

TEST RESULT

SIN	Date of Sampling	Detail of Stack4	Sul	(SO ₂)	ide	Oxic	le of Nitro (NOx)	men.	Cari	(as CO)			ogen Sul (as H.S)	
_ 1	THE REAL PROPERTY OF THE PERSON NAMED IN COLUMN 1	Unit-+	mattent	- Signe	Xafu	ing/Sm³	pgen	Refur	mg/Nee*	ppm	karbe	mg/km²	ppm	kghi
12	29/04/2024	SRIJ-26	140.5	49314	9.73	49.7	24.21	3.44	62.3	49.84	4.32	ND	NE	ND
3,	29/04/2024	SRU-52.	148.7	52:01	1036	54.3	26.45	3.78	65.8	52.64	4.58	ND	ND	ND
	nissible limits mg/Nm3)			NS	75		350	4	7	150			15	

End of Report

Test Method: - Salphur Chocode (as SO₂) (S 11255(S-2)-1985; Octde of Nimeger (as NO₄) (S 11255(S-7)-3005; Carbon Monocode (as CO) (S 13270-1992; Hydrogen Salphide (H₂5) 15 1 (235(P-4)-2005.

Authorised Signatory

1. The Result Indicated above rister to the tested sample and tisted test parameters only, undersement of products at neither inferred not implied.
2. That liability of our liaboratory is limited to the invoice amount.
3. The report shall not be reproduced wholly or in part without witten consent of the liaboratory.
4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.
5. The hom-particular sample received shall be destroyed after one month and parachable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

Page 1 of 3

Issued To:

M/s Indian Oil Corporation Limited

(Refinences Division)

Panipat Naphtha Cracker, Panipat (Haryana)

Sample Description: Sampling Method:

Stack Emission 15:11255

Work order Item: Panipat Refinery & PX-PTA (Table-E & M) Report No. AAL ENV-20240531009

Date of Receiving:

31/05/2024

Date of Starting:

31/05/2024

Date of Completion:

05/06/2024

Date of Reportings Sampling Done By:

05/06/2024 AAL

STACK DETAILS

S/N	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Dia.	Stack Height	Flue Gas Velocity
	17/05/2024	HRSG-01	42	139	3.3	65	(m/sec) 10.4
2	17/05/2024	HRSG-02	42	152	3.3	70	74,550
3	17/05/2024	RRSG-03	42	148	33	70	9.85
4	17/05/2024	HRSG-04	42	156			9.80
5	18/05/2024	HRSG-05	0153	1000	3.3	70	9.87
		(A)	43	172	339	70	9.90
6	18/05/2024	CPP-VHP-3	43	145	334	100	9.65
7	18/05/2024	CPP-VHP-2	42	138	334	100	8.17
8.	18/05/2024	CPP-VHP-1	42	139	3.34	100	8.83
9	18/05/2024	UB-01	42	171	3.84	100	9.80
10	18/05/2024	UB-02	42	162	3.04	100	- 230
LL	20/05/2024	OHCU-RG Heater	42	208		11.50%	9,70
12	20/05/2024	OFICU-LP Section		- Control of the	2.42	63	10.26
13	20/05/2024		42	134	2.42	65	9.44
	200	DHDS Stack	42	233	1.25	:68	10.27
4	20/65/2024	CCRU NHT Heater-FF 101	42	217	1.54	60	9.92

TEST RESULT

S/N	Date of Sampling	Detail of Stack4	Matte	culute r (PM)	Sulp	hur Dio (SO ₂)	xide	Oxio	de of Nitro (NOx)	gen	Carb	on Mone		Nickel &	N & Vana	
		Unit→	Imp/Scient:	Kg/hr	nig/Nm/	ppes	kade	asylvin'	ppm	harte	mg/New*	ppot	hphy	marrian.	ppew	kgór
.11	17/05/2024	HRSG-01	8.9	1.81	73	2.62	1.42	230.8	112.42	60.B3	3.5	2.80	0.71	ND	14	-
2	17/05/2024	HR5G-02	X.1	1.68	8,3	2.90	1.72	172.5	84 02	35.69	3.7	2.96	0.77	ND	-	
3	17/05/2024	HRSG-03	7.3	1.53	7.9	2.76	1.64	389.4	93.26	39.37	29	2.32	0.60	NO	- 13	- 8
4	17/08/2024	HRSG-04	6.9	1.39	8.7	3.94	1.78	170,5	82.05	74.81	3.6	2.04	0.28	ND.		-
3	18/05/2024	HRSG-05	7.0	1,57	7.8	2.73	1.55	185.2	90.21	36.81	3.7	7.96	0.74	80	1	
6-	18/05/2024	CPP-VHP-3	8.1	1.63	7.5	2.62	1.53	204 X	99.91	ALIR	3.5	2.30	0.71	ND	9	-
2	18/05/2024	CPP-VHP-2	7.8	1.42	8.5	2.90	1.51	204.6	00.66	37.21	4.2	3.36	0:76	NEI		7)
5	18/05/2024	CPP-VHP-1	8.2	1.61	2.1	2.48	1.39	1952	93.08	18 29	3.9	3.12	0.77	ND	3	
9	18/05/2024	UB-01	8.4	1.41	9.6	3.36	1.61	290.7	97.76	33.59	4.9	3.92	0.82	ND		-
W	18/05/2024	UB-02	K1.	1.37	8.9	3.11	1.50	1963	05.21	33.22	5.1	4.68	0.86	ND		e:
13.1	20/05/2024	ORCU-NG Heater	8/8	0.91	11.5	4.02	1.19	132.3	64.44	13.84	9.7	9.48	1.20	ND		-2
12	20/05/2024	ONEU-LP Section	7,5	0.77	10.2	3.31	1.05	116.8	56.89	12:04	17.3	13.84	1.78:	ND:	Z.	
13).	20/05/2024	DHDS Stock	5.4	0.14	8.2	3.87	0.21	89.3	43.80	2.32	4.9	3.92	0.13	ND:		- 63
14	20/05/2024	CCRU NHT Hoster-FF101	8.6	0.34	9.4	3.29	0.37	118.8	57.82	4.68	8,6	6.88	0.34	ND	20	E
	nissible limits	Gas	10)		50			350			150				
	mg/Nm³)	liquid	10	0		1700			450			200 £	1/4	STORY.	š	
	Control Control	FCCU		3								400	MILE	SHORE		

Authorised Signatory

Note: 1. The Result indicated above refer to the tested sample and listed fest parameters only, endersement of products is neither informed not implied.

2. Total liability of our laboratory is limited to the invoice amount.

3. This report shall not be reproduced wholly or in part without writen consent of the laboratory.

4. This report shall not be used in any privertising media or as evidence in the court of law without prior written consent of the laboratory.

5. The non-pershable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

Page 2 of 3

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker, Panipat (Haryana)

Stack Emission Sample Description: Sampling Method:

Work order Item:

15.11255

Punipat Refinery & PX-PTA (Table-E & M)

Report No. AAL ENV-20240531009

Date of Receiving:

31/05/2024

Date of Starting: Date of Completion: 31/03/2024

Date of Reporting:

95/06/2024 05/06/2024

Sampling Done By:

AAL

STACK DETAILS

S/N	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Dia.	Stack Height	Fine Gas Velocity
	20/05/2024	CCRU NHT Heater-FF 201	42	236	2.34	(m) 70	(m/nee)
16	20/05/2024	CCRU NHT Heater-FF 205	42	265	2.34	70	10.36
17	21/05/2024	RFCC-CO Boiler	42	173	2.1	375	10.50
18	21/05/2024	RFCC Feed Henter	41	195	10000	67	1.0.34
19	24/05/2024	HGU-PDS		70E	2.1	67	10.24
20	District Comments		41	156	197	60	9.46
1	24/05/2024	HGU-76	41	170	3.4	60	9.61
21	24/05/2024	FROLI-77	42	163	3.4	60	8.99
22	24/05/2024	AVU-02	42	142	5.1	100	11512.5
23	27/05/2024	AVU-01	42	137	3.1	V0.0725	9.13
24	27/65/2024	M5Q Prime G-301-H-101		27.00	HT traces	100	9.16
25	27/05/2024	3.000.000.000.000.000.000	42	214	1,64	60	.9.80
350	D COMMERCE	MSQ Prime G-303-H-201	42	230	1.64	60	9.66
26	27/05/2024	MSQ Prime G-303-H-301	42	225	1.64	.60	9.61
27	28/95/2024	HCU Stack	42	140	13	70	
18	28/05/2024	DCU Heater	43			10.00	9.28
100	JOINTON STATES	MINING PROSES	42	162	3.0	70	9.70

SIN	Date of Sampling	Detail of Stack 4	Matte	culate (PM)	Sulp	hur Dio (SO ₂)	xide	Oxi	de of Nitr (NOx)	ogen	Carb	on Mone			& Van	
		Kinit-+	mm News	ha/te	me/Nor	ppm	Ap/IV	188/Natr	ppm	kg/10	ma/Nim	ppm	kg/lir	mg/Nor*	ppm	Signifer
15	20/05/2024	CCRU NHT Hoser-FF 201	8.7	0,79	690	23.11	0.81	119.6	58.26	10.88	30.5	16.40	1.86	(ND)	4	-
16	20/05/2024	CCRU NHT Heater-FF 305	8.4	9.74	8.6	3.01	B-25	113.5	55.28	9.95	71:8	17.44	1.91	ND	-	-
17	21/05/2024	RFCC-CO Boiler	9000	0.76	12.0	4.41	1.06	148.4	72.28	12.44	112.9	90.32	9.47	ND:	.4	
18	21/05/2024	RFCC Fred Heater	8.0	0.68	12.9	4.51	1:02	113.8	55.43	9.0	6.9	5,52	0.55	ND	17	-
19	24/05/2024	NGO-POS	7.5	0.39	9.5	3.32	0.50	92.3	45.40	4.87	5.7	4,56	0.30	ND	-	-
20	24/05/2024	HGL-70	7.9	1.65	7.2	2.92	1768	152.1	-74,64	31,30	5.2	4.16	1.07	ND		
21	24/05/2024	HGU-77	8.8	1.72	8.2	2.87	1.50	160.7	78.28	31.43	5.7	4.56	3.10	ND	18	14
22	24/05/2024	AVU-02	7.4	3.52	9.7	3.39	4.55	110.3	:53:73	51.78	49	3.92	2:30	Nto	-	-7
23	27/05/2024	AVU-01	7.2	3.4).	8.4	2.94	4.01	108.8	53.00	51.68	4.6	3,84	2,39	ND	-2	: i
24	27/05/2024	MSQ Prime G- 301-H-101	4.9	0.22	18.3	4.46	0.71	132.1	61.34	5.86	15.1	10.64	0.59	ND		- 12
25	27/05/2024	MSQ Prime G- 303-H-203	4.8	0.23	37.6	6.16	0.95	129.7	64.34	5 60	17.1	13.68	0.72	ND	-	-
26	27/05/2024	MSQ Prime G- 303-H-301	4.6	0.23	18.9	6.61	0.80	115.4	56.21	4.91	17.6	14.08	0.74	NO	3	
27	28/05/2024	HCU Stack	5.6	0.17	7,1	2.48	0.22	1243	60.55	3.87	4.6	3.68	0.14	NO		-
28	28/05/2024	EXCL) Heater	7.8	1.28	14.3	5:00	2:35	120.5	58.69	19.84	6.0	5.52	1.14	ND	-	
	insible limits	Gas	10			50			350	1000	THENC.	150	0.000	TO SE		-
,	mg/Nm²)	liquid	10	9		1700			450			200.43	CA	-	5	
	District Description	FCCU	12			*			100			400	U (Q)	TEST!	484	17:1/6

Authorised Signatory

Note: 1. The Result Indicated above refer to the tested sample and felse test parameters only endorsement of products is neither inferred not implied.

2. Total fiability of our taboratory is limited to the involve amount.

3. This report shall not be reproduced wirely or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the court of taw writings prior written consent of the laboratory.

5. The non-pershable sample received shall be destroyed after one month and perighable sample shall be destroyed after one week from the date of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 3 of 3

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Partiput Naphtha Cracker, Paniput (Haryana)

Date of Receiving:

31/05/2024

Sample Description: Sampling Method:

Stack Emission 18:11255

Date of Starting: Date of Completion:

Report No. AAL ENV-20240531009

31/85/2024 05/06/2024

Work order Item:

Panipat Refinery & PX-PTA (Table-E & M)

Date of Reporting: Sampling Done By: 05/06/2024 AAL

STACK DETAILS

S/N	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp.	Stack Din.	Stack Height	Flue Gas Velocity
29	28/05/2024	DHDT-BS VI (New-107)	43	155	(m) 1.8	(m) 70	(m/sec)
30	28/05/2024	HGU-BS VI (New-106)	43	152		11:8:	891
31	28/05/2024	DHDT-H-01	42	Total Street	3.4	89.7	9.50
32	28/05/2024	100000000000000000000000000000000000000		237	1.8	70	9.83
33	- FEW TOWN FEW	DHDT-H-02	41	240	1.8	70	9.75
210	29/05/2024	PX-Isomer	41	216	1.2	:56:	9.82
34	29/08/2024	PX-Tatory	41	171	1.2	56	71.
35	29/05/2024	PX-Xylene	42	160	2.0	58	9.35
36	29/03/2024	PX-CCR	42	191	Charles and the control of the contr	5.5	8.96
17	29/05/2024	PX-NHT			19	100	9.28
18	30/05/2004	- Halle Allertan	42	138	1.0	30	10.24
0143	Part of Children (PA)	PTA-Hot Oil-Heater	42	142	235	60	9.12
19	30/05/2024	PTA-FCEH	42	141	2.35	60	8.65
-04	30/05/2024	PTA-Thermal Oxidizer	42	136	235	60	8.71

TEST RESULT

S/N	Date of Sampling	Detail of Stack4		culate r (PM)	Sulp	hur Dio (SO ₂)	xide	Oxio	de of Nitre (NOx)	ogen .	Curb	on Mon		100000000000000000000000000000000000000	& Van	The state of the s
- 1		Unit	mg/Nm²	karby	mg/hm²	Sprin	ký/hr	ma/Nov.	ppm	ka/te	ong Simi	ppm.	ku/br	=gNm²	ppor	hg/kr
29	28/05/2024	DEDT-85 VI (New-167)	4.6	0.25	8.9	3.11	0.49	135.4	65.95	7.49	8.3	6.64	0.46	ND	+	3
30	28/05/2024	(New-106)	4,7	1.15.	8.5	2.97	1.80	95.7	45:64	19.87	8.1	6.48	1,72	ND	-	3
31	24/05/2024	DHDT-H-01	4.9	0.30	10.5	3.67	9.54	140.2	68.29	7,18	4.9	3,92	0.25	ND	-2	-
32	28/05/2024	DHD1-H-62	4.7	0.26	9.3	3.25	16.47	129,6	63.10	6.55	4.2	3.36	0.23	ND	-	1
33	29/03/2024	PX-Isomer	4.8	0.11	17.6	6:16	0.42	116.5	53,92	2.63	38.5	30,64	0.91	SID	1	-
34	29/05/2024	Psy-Tatory	6.1	0.15	8.1	2.83	0.20	96.8	47.15	2.41	ND		43	ND	43	
35	29/95/2024	PX-Xylene	7.3	0.50	8.9	331	0.40	112.8	54.04	1.66	ND	-	-	ND		
36	29/05/2024	PX-CCX	8.2	0.49	7.2:	- 2.52:	0.43	90.4	44.03	5.35	6.5	5.20	9.38	NE		
37	29/05/2024	PX-NHT	7.9	0.16	7.6	2:66	0.16	95.3	46.42	1.95	7.9	5.92	0.15	ND	16.	+1
314	30/05/2024	PTA-blue Oil-	62	9.62	30.5	10.67	3.04	45.9	22.16	4.58	ND		(COPPL)	ND		
30.	30/05/2024	PTA-FCPH	6.5	0.63	8.4	2.94	0.81	121.3	59.08	11.75	ND	2	-6	500	150	80
40	36/05/2024	PTA-Thornal Oxidizer	7.4	0.21	5.4	2.24	0.62	34.7	16.90	3.33	4.9	3.60	0.43	ND	-	
-	issible limits	Gus	10			50			350	-		150		A022	-1	_
10	mg/Nm [*])	fiquid	100	0		1700			450			200		_	3	_
-	ty-we Descent	FCCU	-			12.						400	-		14	-

"*End of Report"

Test Method: - Particulate Matter (as PM) IS 11255(P-1)-1985, Sulphur Dioxide (as SO₂) IS 11255(P-2)-1985, Oxide of Nitrogen (as NO₂) IS 11258(P-7)-2005, Carbon Monoxide (as CO) IS 13270-1992, Nickel & Varudium USEPA Method 29 by AAS

Authorised Signatory

Note: 1. The Result Indicated above refer to the tested sample and listed test parameters only, encorasment of products is neither inferred not implied.

Total liability of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

The non-pershable sample received shall be destroyed after one month and penshable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

Refineries Division)

Panipas Naphtha Cranker,

Penipat (Haryana)

Sample Description: Stuck Emission

Sampling Method:

Work order Items:

15:11255

Paniput Relinery (Table-F)

Report No. AAL ENV-20240628025

Date of Receiving:

28/06/2024

Date of Starting:

28/06/2024

Date of Campletion:

04/07/2024

Date of Reporting:

64/07/2024

Sampling Done By:

AAL

STACK DETAILS

SIN	Date of Sampling	Detail of Stack	Ambient Temp.	Stack Temp. CC)	Stack Din. (m)	Stack Height (40)	Flue Gas Vehicity (60/wc)
	27/06/2023	SRU-26	40	184	100	76.6	10.66
3	27/06/2024	SRAES2	43	128	1.9	960	(0.53

EXSTRESULT

S/N	Date of Nampling	Betail of Stacks	Sulphor Dioxide (SO ₃)		Oxide of Nitrogen (NOX)		Carton Monoside (as CO)		Hydrogen Sulphide (us H ₂ S)					
		Cnit-+	the Title	Han	Nath	melbior	apm:	Note:	mužia.	200	ight	HgNis*	100	Ng/tu
*	27/06/300/4	NRL526	140.7	49.20	9.76	47.2	23.02	3.27	62.2	13,80	4,00	1407	ND	ND
E	27/06/2024	SRIJ-57	15/2	15.49	10.60	45.6	22.2A	3.16	73.2	38.36	5.09	NO:	NO	ND
	nissifes Gesits mg/Sm/li			163			350		7	150			13	

^{**} End of Report**

Time Method: - Shipping Discode Les 9(0,) (8-1) (2509-1)-1885. Conde of Microgen (at 90), (7) 1125569-79 (80), Carbon Monopolis (per CO) (8-10250-1892). Historypen Sulphule (1), (7-10-1805). (3-10250-1893).

Authorised Signatory

The Result indicated shows rater to the tasted sample and listed sext parameters only, underscened of products is mether ellipsed out implied.

2. Poly negative of our leptomory a limited to the investor amount.

3. This impact will not be apprehiment which or in part without written consent of the laboratory.

4. This report shall not be apprehiment which or in part without written consent of the laboratory and in the laboratory of the report shall not be used in any expension predict or services in the capital and services and in the laboratory.

5. This non-constitutive sample resistant all will be desired after one record and periodiate warrants shall be desired as the capital state of report union appendict.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Issued Vo:	Mix Indian Oil Corporation Limited	Report No. AAL WQT	1-20240124027	
(1221111111111111111111111111111111111	(Refineries Division)	Date of Receiving:	24/01/2024	
	Padipat Naphtha Cracket. Panipat (Haryung)	Date of Starting:	24/01/2024	
		Date of Completion:	31/01/2024	
Sample Description:	Effluent Water Sample	Date of Reporting:	31/01/2024	
Work order Item:	Panipat Refinery (Table-A)	Sample Quantity:	2 Litre	
Sample Collection Date:	23/01/2024	Sample Packing Condition:	Plastic Cm	
Sample 10:	ETPI- Guard Pond	Sample Collected By:	AAL	

TEST	REST	EF-TC

		LESTRO	NULL		
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method
1	pH Visloe	1	7.78	6.0 - 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/k	2,4	5.0 Max.	18 3025 (P-39)-2021
3	Dischemical Oxygen Demand	mgd	13.5	15 Max.	IS 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	251 <u>m</u> /T	86.0	125 Max.	IS 3025(P-58)-2023
5	Total Suspended Solids	nig/l	16.0	20 Max.	IS 3025 (P-17)-2022
960	Phenols	mg/I	0.16	0.35 Max.	IS 3025(P-43/S-1)-2022
7	Sulphide (as S)	mg/t	0.13	0.5 Max.	15 3025(P-29)-2022
8	Cyantile (as CN)	mg/l	ND _{d,m,41000}	0.20 Mass.	APHA 4500 CN-D
191	Ammonia (as N)	Tgm	4,0	15-Max,	IS 3025(P+34)+1988
10	Total Kjeldahl Nimogen (as N)	mg/l	8.2	40 Max.	IS 3025(P-34)-1988
11		Pgm	1.31	3.0 Max.	IS 3025(P+31)-1988
12	Hesavalent Cocomium (as Cr*1)	m±/1	NDon. em	0.1 Max.	IS 3025(P-52)-2003
18	Total Chromium (as Cr)	mg/l	NDamen	2.0 Max.	IS 3025(P-52)-2003
14	Lead (ns Pb)	mig/L	NDom.out	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/l	NDagsamu	0.01 Max.	IS 3025(P-48)-1994
16	Zinov (an. Zin)	mg/l	0.15	5,0 Max.	IS 3025(P+49)-1994
17	Nickel (as Ni)	med	NDitte-ii	1.0 Max.	IS 3025(P-34)-2003
18	Copper (as Cu)	ms/l	NDupe=00	1.0 Max.	IS 3025(P-42)-1992
19	Vamadiam (ns V)	mg/I	ND and and	0.2 Max.	APHA (23 st Edition), 2017.
20	Benzene (us C ₂ H ₆)	mg/l	ND _{LDL***}	0.1 Max.	APHA (23 th Edition), 2017, 62003
21	(Supple aspyrane (BaP))	mHhj	ND _{abcreso}	0.2 Max.	APHA (23 Edition), 2017.
	No. Page 17	"" End of	Répart**	Y 34	Authorised Signatory

Note: 1. The Result indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.

2. Total liability of our laboratory is limited to the invoice amount.

3. This report shall not be reproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

5. The non-personable sample received shall be destroyed after one month and personable sample shall be destroyed after one week from the date of result of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST CERTIFICATE

Page 1 of 1

Issued To:	M/s Indian Oil Corporation Limited	Report No. A.	AL WQT-20240124028
AUTOSA FAI	(Refineries Olyssian)	Date of Receiving:	24/01/2024
	Panipat Naphtha Crucker, Panipat (Haryma)	Date of Starting:	24/01/2024
	Langua germanay.	Date of Completion:	31/01/2024
Sample Description:	Effluent Water Sample	Date of Reporting:	31/01/2024
Work order Item:	Panipid Relinery (Table-A)	Sample Quantity:	2 Litre
Sample Collection Date:	23/01/2024	Sample Packing Cond	ition: Plastic Can
Sample ID:	ETP2- Guard Pend	Sample Collected By:	AAL

TEST RESULT

		AN TAXABLE PROPERTY.	STOCKEDATE .				
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline (Patroleum Old Reflere)	Testing Method		
1	ph Value		7.63	6.0 - 8.5	IS 3025(P+11)-2022		
:2	Oil & Grease	ngt	2.1	5.0 Mas.	IS 3025 (P-39)-2021		
3	Biochemical Oxygen Damand	mg/l	12.6	12 Max.	IS 3025(P-44)-2023		
4	Chemical Oxygen Demand (COD)	mg/l	70,0	125 Max.	IS 3025(P-58)-2023		
5	Total Suspended Solids	m <u>u</u> /f	14.0	20 Max.	IS 3025 (P-17)-2022		
6	Phetrois	mg/I	0.11	0.35 Max.	IS 3025(P-43/S-1)-2022		
7	Salphide (as S)	m#/t	0.12	0.5 Max.	IS 3025(P-29)-2022		
8	Cyanide (as Civ)	тел	NDaponen	0.20 Max.	APHA 4500 CN-D		
9	Ammonia (as N)	mg/l	3,0	15 Max.	IS 3025(P-34)-1988		
10	Total Kjeldahl Nittogen (as N)	Mgm.	7.2	40 Max.	IS 3025(P-34)-1988		
11	P	milt	1,16	3.0 Mes.	15-3025(P-31)-1988		
12	Hexavalent Chromium (as Cr 7)	mig/t	NDunism	0.1 Min.	IS 3025(P-52)-2003		
13	Total Chromium (as Cr)	eng/f	NDamen	2.0 Max.	IS 3025(P-52)-2003		
14	Leaf (as Pb)	mg/3	NDuncaisi	0.1 Max.	IS 3025(P=47)-1994		
15	Manassy (as: Hg)	mis/l	ND (m.om)	0.01 Max.	IS 3025(P-48)-1994		
136	Zine (as Zn)	109/1	0.15	5.0 Max.	IS 3025(P-49)-1994		
17	Nickel (as Ni)	10g/1	NDanchin.	1.0 Max.	18-3025(P-54)-2003		
18	Copper (28/Ca)	mg/t	NDana am	1.0 Mas,	IS 3025(P-42)-1992		
119	Variadisms (as V)	mg/l	NDunessy	0.2 Max.	APHA (23 rd Edition), 2017, 3111D		
20	Denzene (m.C.H.)	rng/t	NDuncert	0.1 Mine.	APHA (23 rd Edition), 2017, 6200B		
21	Banzo-n-pyrene (BaP)	mg/l	NDant-now	0.2 Max	APHA (23 rd Ediston), 2017.		
	Shrue Dogadi (10) Tentr Samme Line	**En	d of Report**	Ot _	Authorised Signatory		

The Result Indicated above refer to the tested wample and listed test parameters only, endorsement of products is neither inferred not implied total listellity of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be used in sky advertising media or as evidence in the court of law without prior written consent of the laboratory.

The non-period shall not be used in sky advertising media or as evidence in the court of law without prior written consent of the laboratory.

The non-period shall not be destroyed after one month and period able to destroyed after one week from the date of issue of report unless specified



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST CERTIFICATE

Page 1 of 1

based Tor M's Indian Oil Corporation Limited

(Refineries Division) Panipat Naphthu Cmcker. Panipat (Haryana)

Sample Description: Effluent Water Sample Work order Item: PX-PTA (Table-1) Sample Collection Date: 23/01/2024

Sample 11): PTA-ETP-3- Guard Pond

AAL WOT-20240124012 Report No.

Date of Receiving: 24/01/2024 Date of Starting: 24/01/2024 Date of Completion: 31/01/2024 Date of Reporting: 31/01/2024 Sample Quantity: 2 Line

Sample Packing Condition: Plastie Can Sample Collected By: AAL

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method	
j.	pH Value		7,48	6.5 - 8.5	IS 3025(P-11)-2022	
2	Biochemical Dkygon Demand	ram-	23.0	30 Mix.	IS 3025(P-44)-2023	
3	Phenol	mg/l	0.27	I Max.	IS 3025(P-43/S-1)-2022	
42	Sulphide (as S)	mg/l	0.22	2 Max	IS 3025(P-29)-2022	
5	Chemical Oxygen Demand (COO)	mg/l	126.0	250 Max.	(S 3025(P-58)-2023	
4	Cyanide (as CN)	mg/l	NDancom	0.20 Max	APHA 4500 CN-D	
7	Fluoride (us F)	Tight .	1.32	5 Max.	APHA 4500-F ()	
8	Total Suspended Solids	mg/l	27.0	100 Max.	IS 3025 (P-17)-2022	
:9	Hexavalent Chremium (as Cr ⁺⁶)	mg/l	NDabonia	0.1 Max.	IS 3025(P-52)-2003	
10	Total Chromium (28 Cr)	med	NDanaca	2.0 Max.	IS 3025(P-52)-2003	
	March and Color of the Color of					

[&]quot;* End of Report"

Deputy Technical Managara **Authorised Signatory**

The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied fotal liability of our separatory is limited to the invoice amount.

This report shall not be isproduced wholly or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

The non-perishable sample received shall be disstroyed after one month and perishable sample shall be destroyed after one week from the

date of issue of report unless specified



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page I of I

Issued To: M/s Indian Oil Corporation Limited

23/02/2024

(Refineries Division) Panipat Naphtha Cracker, Panipat (Haryana)

Sample Description: Work order Item:

Effluent Water Sample Panipat Retinery (Table-A)

Sample Collection Date:

Sample ID: ETPI- Guard Pond Report No.

AAL WOT-20240224034

Date of Receiving: Date of Starting: Date of Completion: 24/02/2024 24/02/2024 29/02/2024

Date of Reporting: Sample Quantity:

29/02/2024 2 Litre

Sample Packing Condition: Sample Collected By:

Plastic Can AAL

TEST RESULT

		A. A	ADD DO BUILD		
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method
3	pH-Value		7.62	(Parolean Oit Ballsony) 6.0 — 8.5	IS 3025(P-11)-2022
2	Oll & Grease	mg/l	2.2	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand	mg/l	12.4	15 Max.	IS 3025(P-44)-2023
4	Chanical Oxygen Demand (COD)	m <u>e</u> /1	73.0	125 Max	IS 3025(P-58)-2023
5	Total Suspended Solids	mg/I	14.0	20 Max	IS 3025 (P-17)-2022
0	Phenois	mg/l	0.14	0.35 Max	IS 3025(P-43/S-1)-2022
4	Sulphide (as 8)	mg/I	0.12	0.5 Miss.	IS 3025(P-29)+2022
8	Cyanide (as CN)	mg/I	NDani-age	0.20 Max.	APHA 4500 CN-D
.9	Ammonia (us N)	mg/l	3.2	15 Max.	(S 5025(P-34)-1988
to	Total Kjeldahl Nitrogen (as N)	myl	7,3	40 Max.	IS 3025(P-34)-1988
11	P	mg/I	1.22	3.0 Max	IS 3025(P-31)-1988
12	Hesavalent Cheomium (as Cr**)	mg/I	NDancon	0.1 Max.	IS 3025(P-52)-2003
13	Total Chromium (as Cr)	mg/l	NDinceni	2:0:Max.	IS 3025(P+52)+2003
14	Lead (as Ph)	mg/t	ND _{0.22.000}	0.1 Max.	15 3025(P-47)-1994
15	Moreory (as Hg)	mg/l	NDancasu	0,01 Max.	IS 3025(P-48)-1994
16	Zinc (les-Zn)	mg/l	0.12	5.0 Max.	IS 3025(P449)-1994
17	Nickel (#K Ni)	mg/I	ND _{intern}	1.0 Max.	IS 3025(P-54)-2003
18	Capper (as Ca)	mg/l	NDunam	1.0 Max.	IS 3025(P-42)-1992
19	Variadium (as V)	rng/1	NDamous	0.2 Nax.	APHA (23 st Edition), 2017, 3111D
20	Henozene (us Colta)	mg/t	ND _{anceoun}	0.1 Max.	APHA (23" Edision), 2017, 6200B
21	Hanzo a-pyrene (Bal ^k)	mg/l	ND ₁₁₀ -con	0.2 Max.	APHA (23" Egingo), 2012, -
	THE STREET WAS ASSESSED.	**End of	Report		Authorised Signatory

The Result Indicated above refer to the tested sample and listed test parameters only, endomerount of products a neither inferred not implied

2. Total bigility of our isoboratory is limited to the invoice amount.
3. This report shall not be reproduced wholly or in part without written consent of the laboratory.
4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.
5. The non-pensivable sample received shall be destroyed after one month and pensivable sample shall be destroyed after one week from the date of issue of report unless specified.



Sample ID:

ARIHANT ANALYTICAL LABORATORY DVT. LTD

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

Sample Collected By:

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

AAL

Issued Ta:	M/s Indian Oil Corporation Limited	Report No. AAL WQ1	AAL WQT-20240224035	
HISSER AT ITT	(Refineries Division)	Date of Receiving:	24/02/2024	
	Panipat (Haryana)	Date of Starting:	24/02/2024	
		Date of Completion:	29/02/2024	
Sample Description:	Effluent Water Sample	Date of Reporting:	29/02/2024	
Work order Item:	Panipat Refinery (Table-A)	Sample Quantity:	2 Litre	
Sample Collection Date:	23/02/2024	Sample Packing Condition:	Plantic Can	

TEST RESULT

ETP2- Guard Pond

		apparent and a	DIGESTANO.		
S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
			LY FIZA	Guideline (Peruleus Of Beforey)	
L	pH Value		7.54	6.0 - 8.5	IS 3025(P-11)-2022
2	Chil & Circusic	mg/l	2.7	5.0 Max	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand	mg/l	13.1	15 Max.	IS 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	m <u>w</u> 1	81.0	123 Max.	IS 3025(P-58)-2023
5	Total Suspended Solids	mg/I	17.0	20 Max.	IS 3025 (P-17)-2022
6	Phenois	mg/I	0.13	0.35 Max.	15 3025(P-43/S-1)-2022
78	Sulphide (as S)	mg/1	0.14	0.5 Max.	IS 3025(P-29)-2022
8	Cyunide (as CN)	mg/l	ND sames	0.20 Max.	APHA 4500 CN-D
9	Ammonia (us N)	T/gen	3.4	15 Max.	1S 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mag/t	6.0	40 Max.	18 3025(P-34)-1988
11	P	ngd	1.15	3.0 Max.	TS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr**)	mg/l	NDancan	0.1 Max.	1S 3025(P-S2)-2003
13	Total Chromium (as Cr)	mg/l	NDaman	2.0 Max.	IS 3025(P-52)-2003
14	Lend (as Pb)	mg/l	NDuncam	0.1 Max.	15 3025(P-47)-1994
15	Mercury (as Hg)	mg/l	NDass. amo	0.01 Max.	IS 3023(P-48)-1994
16	Zinc (m Zn)	figm	0.10	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	010/1	NDancen	1.0 Max.	18 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDameste.	1.0 Max.	IS 5025(P-42)-1992
19	Vanadium (as V)	mg/l	NDanisia	0.2 Max	APHA (23 rd Edition), 2017, 3111D
20	Benzene (as C _a H _e)	mg/t	ND ₆₀₀₋₆₀₀₀	0.4 Max.	APHA (23 nd Edition), 2017, 6200B
21	Banzo a-pyrene (BaP)	mg/l	ND ₀ m-sm	0.2 Max,	AULA (23th latikers), 2017.
83	NO-Se Operat CM - Locar Section Links	**End	i of Report**	All Sales	Authorised Signatory

Note: 1. The Result Indicated above rater to the tented sample and listed test parameters only, endorsement of products is renther interest not implied.

Total liability of our laboratory is limited to the impore amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory. The non-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:	M/s Indian Oil Corporation Limited	Report No. AAL WQT	-20240224042
	(Refineries Division)	Date of Receiving:	24/02/2024
	Paniput (Haryana)	Date of Starting:	24/02/2024
		Date of Completion:	29/02/2024
Sample Description:	Effluent Water Sample	Date of Reporting:	29/02/2024
Work order Item:	PX-PTA (Table-I)	Sample Quantity:	2 Little
Sample Collection Date:	23/02/2024	Sample Packing Condition:	Plastic Can
Sample (t):	PTA-ETP-3- Guard Pond	Sample Collected By-	WAT:

TEST RESULT

		***************************************	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAM		
S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
¥:	pH Value	K BLA	7.40	6.5 - 8.5	IS 3025(P-11)-2022
. 2	Hischemical Oxygen Demand (900) 3 days at 27°Ci	mg/l	21,0	30 Max	IS 3025(P+44)-2023
-3	Phonol	mg/l	0.25	1 Max.	IS 3625(P-43/S-1)-2522
4	Sulphide (as S)	mg/l	0.20	2 Max.	IS 3025(P-29)-2022
5	Clamical Oxygen Demand (COD)	$m_{\mathcal{Q}}/1$	115.0	250 Max.	IS 3025(P-58)-2023
6:	Cynnide (as CN)	mg/I	NDmm.com	0.20 Max.	APHA 4500 CN-D
7	Fluoride (as F)	mg/l	1.27	5 Max	APHA 4500-F D
:83	Total Suspended Solids	mg/l	29.5	100 Mas.	IS 3025 (P-)7)-2022
.9	Hexavalent Chromium (as Cr 6)	mg/f	ND _{6,00,4000}	0.1 Max.	IS 3025(P-52)-2003
to	Total Chromium (us Cr)	mg/l	NDames	2.0 Max.	IS 3025(P-52)-2003
	NOTICE DOCUME CORPORATION Described until				

"End of Report"

TOSH SRIVASTAVA Deputy Technical Manager **Authorised Signatory**

1. The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.
2. Total liability of our lisboratory is limited to the invoice amount.
3. This report shall not be reproduced wholly or in part without written consent of the laboratory.
4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.
5. The non-pecthable sample received shall be destroyed after one month and penahable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website : www.aalkundli.com

	TEST REPORT		Page 1 of 1
Issued To:	M/s Indian Oil-Corporation Limited	Report No. AA	M. WQT-20240323019
	(Reflueries Division) Panipat Naphtha Cracker, Panipat (Haryana)	Date of Receiving: Date of Starting:	23/03/2024
Sample Description:	Effluent Water Sample	Date of Completion: Date of Reporting:	28/03/2024 28/03/2024
Work order Item: Sample Collection Date: Sample ID;	Panipat Refinery (Table-A) 22/03/2024 ETP1- Guard Pend	Sample Quantity: Sample Packing Conditions Sample Collected By:	3 Litre tion: Plastic Can

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method	
1	pH Value	A LA	7,57	Overidana Oli Belintes) 6.0 – 8.5	IS 3025(P+11)-2022	
2	Oll & Grease	mg/l	2.0	5.0 Max.	IS 3025 (P-39)-2021	
3	Biochemical Oxygen Demand	mg/l	13,6	15 Max.	IS 3025(P-44)-2023	
- 4	(BOD - 3 days at 27°C) Chemical Oxygen Demand (COD)	mg/l	87.0	125 Man.	IS 3025(P-58)-2023	
5	Total Suspended Solids	mg/l	17.0	20 Max	IS 3025 (P+17)-2022	
6	Phenols	mg/l	0.18	0.35 Max	IS 3025(P-43/S-1)-2022	
7	Sulphide (as S)	mg/l	0.10	0.5 Max.	IS:3025(P-29)-2022	
8	Cyunide (as CN)	mg/1	ND-line or	0.20 Max	APHA 4500 CN-D	
9	Ammonia (as N)	mg/l	2.6	15 Mics	IS 3025(P-34)-1988	
10	Total Kieldahl Nitrogen (as N)	mg/l	5.2	40 Max.	IS 3025(P-34)-1988	
31	p	mg/l	1,12	3.0 Max.	IS 3025(P-31)-1988	
12	Hexavalent Chromium (as Cr*6)	Ngm	NDunt son	0.1 Max.	IS 3025(P-52)-2003	
13	Total Chromium (as:Cr)	mg/l	ND(task42)	2.0 Max.	18/3025(P-52)-2003	
14	Lend (as Pb)	mg/l	NDunsam	0.1 Max.	18 3025(P-47)-1994	
15	Mercury (as Hg)	mg/I	ND:120,-0.0011	0.01 Max.	IS 3028(P-48)-1994	
16	Zinc (as Zn)	mg/I	0.10	5:0 Max.	JS 3025(P-49)-1994	
1.7	Nickel (as Ni)	mg/1	ND _{ers-en}	1.0 Max	IS 3025(P-54)-2003	
18	Copper (as Cu)	mg/l	ND answers	1.0 Max.	IS 3025(P-42)-1992	
19	Vanadium (as V)	mg/I	NDancem	0.2 Max.	APHA (23th Edition), 2017,	
20	Benzone (as C ₆ H _k)	mg/i	NDs.cs.minzs	0.1 Max.	3111D APHA (23 ⁵⁰ Edition), 2017,	
21	Burnos n-pyrene (BaP)	mg/l	NDumenou.	0.2 Max.	620/8 APHA (23" Edition), 2017, 6410B	

End of Report



Authorised Signatory

The Result indicated above refer to the touled sample and listed sell parameters only, endorsement of products is neither inferred not implied

The recent received above feet to the devote amount.

That liability of our laboratory is limited to the involve amount.

This report shall not be reproduced whelly or in part without written consent of the laboratory.

This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory.

The non-pershable sample received shall be destroyed after one month and pershable sample shall be destroyed after one when from the date of lastre of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division) Panipat Naphtha Crucker,

Panipat (Harynea)

Sample Description: Work order Item:

Effluent Water Sample Paniput Refinery (Table-A)

Sample Collection Date:

22/03/2024

Sample ID:

ETP2-Guard Pond

Report No.

Date of Receiving:

23/03/2024

AAL WQT-20240323020

Date of Starting: Date of Completion:

25/03/2024 28/05/2024

Date of Reporting: Sample Quantity:

28/03/2024 2 Litte

Sample Packing Condition: Sample Collected By:

Plastic Can AAL

TEST RESULT

		THE R. P. LEWIS CO., LANSING, MICH. 49, 120, 120, 120, 120, 120, 120, 120, 120	SHEET STATE OF THE SHEET STATE O		
S. Na.	Test parameters	Voit	Results	Permissible Limits as per CPCB Guideline	Testing Method
1	pH Value	194	7,58	Gordenine Dil Refinery) 6.0 – 8.3	IS 3025(P-11)-2022
. 2	Oil & Grease	mg/l	2.4	5.0 Max.	IS 3025 (P-39)-2021
3:	Biochemical Oxygen Demand	mg/1	14.3	15 Max.	IS 3025(P-44)-2023
-4	(BOB - Lidge at 27°C) Chemical Oxygen Demand (COD)	mg/l	92.0	125 Max	IS 3025(P-58)-2023
- 5	Total Suspended Solids	tng/l	18.0	20 Max	IS 3025 (P-17)-2022
6	Plucuolis.	mg/I	0.22	0.35 Max	IS 3025(P-43/S-1)-2022
75	Sulphide (us S)	m <u>u</u> /1	0.16	0.5 Max	IS 3025(P-39)-2022
8	Cyanide (as CN)	mg/l	NDGREER	0.20 Mas.	APHA 4500 CN-D
9	Ammonia (as N)	mg/i	4.0	15 Mnx	IS 3025(P-34)-1588
1.0	Total Kjeldahl Nitrogen (as N)	mg/I	7.3	40 Max	IS 3025(P-34)-1988
11	P	mg/l	1.26	3.0 Max.	IS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr*)	mg/l	ND (Znuwas)	0.1 Max.	(S 3025(P-52)-20()3
13	Total Chromnum (as Cr)	mg/l	NDuic-a	2.0 Max.	IS 3025(P-52)-2003
14	Lead (as Pb)	mg/l	NDanesew	G.I. Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mgd	NDatema	0.01 Mass.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/L	0.17	3.0 Max.	IS 3025(P-49)-1904
17	Nickel (as Ni)	mg/l	NDumen	L0 Max:	IS 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDancon	1.0 Max.	IS 3025(P-42)-1992
(9	Vanadium (as/V)	mg/I	NDana-waw	0.2 Max.	APHA (23rd Edition), 2017,
20	Henzene (as C _a H _a)	mg/l	NDitatemen	0.1 Max.	3111D APHA (23 rd Edition), 2017,
31	Banzova-pyrene (BaP)	mg/l	NDam-eps	0.2 Max.	62008 APHA (23 rd Edition), 2017, 6410B

*End of Report**

OSH SRIVASTAVA **Authorised Signatory**

The Result Indicated above refer to the tested sample and listed test parameters cray, endorsement of products is neither interned not implied. Teste ligibility of our laboratory is limited to the invoice amount. This report shall not be reproduced wholly or in part without written consent of the lighbristory. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the laboratory. The non-penishable sample is a set the laboratory and penishable sample shall be destroyed after one week from the date of asue of report unless specified.



Sample Description:

Work order Item:

ARIHANT ANALYTICAL LABORATORY PVT. LTD.

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

28/01/2024

M/s Indian Oil Corporation Limited (Refluctics Division) Issued To:

Panipat Naphtha Cracker, Puniput (Haryana)

Effluent Water Sample PX-PTA (Table-I)

Sample Collection Dates 22/03/2024

Sample 1D: PTA-ETP-3- Guard Pond Report No. AAL WOT-20240323008

Date of Receiving: 23/03/2024

Date of Starting: 23/03/2024 Date of Completion: 28/03/2024

Date of Reporting:

Sample Quantity: 2 Litre Sample Packing Condition: Plastic Can

Sample Collected By: AAL

TEST RESULT

			The state of the s		
No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
1	pH Value		7,58	6.5 - 6.5	IS 3025(P-11)-2022
2	Biochemical Oxygen Demand	mg/l	23.0	30 Max.	IS 3025(P-44)-2023
1	Phenot	rigm	0.21	1 Max.	15 3025(P-43/S-1)-2022
4	Sulphide (is S)	mg/I	0.18	2 Min.	IS 3025(P-29)-2022
5	Chemical Oxygen Demmd (COD)	mg/1	109.0	250 Max.	IS 3025(P-38)-2025
6	Cyanide (as CN)	mg/I	ND _{108,000}	0.20 Mas.	APHA 4500 CN-D
7	Fluoride (as F)	nig/l	1.10	5 Max.	APHA 4500-F D
8	Total Suspended Solids	mg/t	24.0	100 Max.	IS 3025 (P-17)-2022
9	Hexavalent Chromium (as Cr ³⁶)	mg/L	NData-em	0.1 Max.	1S 3025(P-52)-2003
10	Total Chremium (as Cr)	Tvgm	NDancan	2,0 Max.	18 5025(P-52)-2003
	MIN-Ten Desirios, CDN-Circus Desarros, Cong	- Comme			

** End of Report**

Deputy Technical Manager

Authorised Signatory

The Result indicated above refer to the tested sample and listed test parameters only, endorsement of products is cellbar inferred not implied.

2. Total facility of our jaboratory is limited to the invoke amount.

3. This report shall not be reproduced wholly or in part without written poncont of the taboratory.

4. This report shall not be used in any advertising made or as evidence in the court of law without prior written consent of the taboratory.

5. This non-purishtable sample received whall be destroyed after one month and perishable sample shall be destroyed after one week from this date of issue of report unless specified.

AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:	Mis Indian Oil Corporation Limited (Refluctics Division)		Γ-20240423036
	Panipat Naphtha Cracker, Panipat (Haryana)	Date of Receiving: Date of Starting:	23/04/2024
Sample Description:	Effloent Water Sample	Date of Completion: Date of Reporting:	29/04/2024
Work order Item: Sample Collection Date:	Paniput Refinery (Table-A) 22/04/2024	Sample Quantity:	29/04/2024 2 Litre
Sample ID:	ETP1- Guard Pond	Sample Packing Condition: Sample Collected By:	Plastic Can

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
			LITTIC	as per CPCB Guideline	ALL NAMES TO A SECOND
1	pH Value	S. Phil	7.82	(Festileum Of Refinery) 5.0 – 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/l	2.0	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand (800 - 1 days at 27°C)	mg/l	14.3	15 Max	18 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	mg/l	95.0	125 Max.	IS 3025(P-58)-2023
5:	Total Suspended Solids	mg/l	18.0	20 Max.	IS 3025 (P-17)-2022
6	Phenols	mg/I	0.19	0.35 Max	IS 3025(P-43/S-1)-2022
7.	Sulphide (as S)	mg/l	0.15	0.5 Max.	IS 3025(P-29)-2022
8	Cyunide (as CN)	mg/l	NDiameter	0.20 Max:	APHA 4500 CN-D
9	Ammonia (as N)	mg/I	5.3	15 Max.	IS 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mg/l	9.6	40 Max.	IS 3025(P-34)-1988
11	P	mg/l	1.16	3.0 Max.	IS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr 2)	m <u>o</u> /l	ND _{4,00,400}	0.1 Max	IS 3025(P-52)-2003
13.	Total Chromium (as Cr)	mg/l	NDamen	2.0 Max.	IS 3025(P-52)-2003
14	Lead (as Ph)	mg/I	NDamaen	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Fig)	mg/l	NDanage.	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/1	0.13	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mg/l	NDanan	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDexam	LO Max.	IS 3025(P-42)-1992
19	Vonadium (as V)	mg/l	NDanisan	0.2 Max.	APHA (23 ^{nl} Edition), 2017,
20	Benurene (as C _n H _n)	mg/l	NDizzemian	0.1 Max.	3111D APHA (23 rd Edition), 2017,
21	Banzo a-pyrene (BaP)	mg/l	NDan-00	0.2 Max.	6200B APPA 423 d Edition), 2017.
	htbetter thecost, U.SCourt Director Limit	**End of F	Report**		Authorised Signatory

The Result Indicated above rater to the rested sample and liabel test parameters only, endorsement of products in neither inferred not implied.
 This report shall not be reproduced wholly or in part without written consent of the teleprotony.
 This report shall not be used in any advertising mode or as evidence in the court of law without prior written consent of the laboratory.
 The han-perishalls complet received while be described after one which had possible sample shall be described from the date of same of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana). Ph.: 7082301442, 9250014551 Email: aalkundl@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

AAL

Issued To:	M/s Indian Oil Corporation Limited	Report No.	AAL WQT-20240423037
	(Refineries Division) Panipat Naphtha Crucker.	Date of Receiving:	23/04/2024
	Panipat (Haryana)	Date of Starting:	23/04/2024
		Darken Prevention and	The second secon

29/04/2024 Date of Completion: Sample Description: Effluent Water Sample Date of Reporting: 29/04/2024 Work order Item: Panipat Refinery (Table-A) Sample Quantity: 2 Litre Sample Collection Date: 22/04/2024 Sample Packing Condition: Plastic Can Sample ID: ETP2-Guard Pond Sample Collected By:

TEST RESULT

		IISI B	ESULT		
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method
3	pH Value	5	7.74	(Petroleum Oil Refinery) 6.0 – 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/l	2.4	5.0 Max	18 3025 (P-39)-2021
7	Biochemical Oxygen Demand (BOD - 1 days at 27°C)	mg/l	13.0	15 Max	IS 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	mg/l	82.0	125 Max.	IS 3025(P-58)-2023
Ė	Total Suspended Solids	mg/i	15.0	20 Max.	IS 3025 (P-17)-2022
6	Phenois	mg/l	0.13	0.35 Max.	1S 3025(P-43/S-1)-2022
7	Sulphide (as S)	mg/I	0.10	0.5 Max.	IS 3025(P-29)-2022
8	Cyanide (as CN)	mg/l	NDuncoss	0.20 Max.	APHA 4500 CN-D
9	Ammonia (as N)	mg/l	4.2	15 Max	IS 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mg/l	8.0	40 Max.	IS 3025(P-34)-1988
11	P	mg/I	1.19	3.0 Max.	IS-3025(P-31)-1988
12	Hexavulent Chromium (as Cr*6)	mg/l	ND _{(Line)(0)}	0.1 Max.	IS 3025(P-52)-2003
13	Total Chromium (as Cr)	mg/I	NDsound	2.0 Max.	1S 3025(P-52)-2003
14	Lead (as Pb)	mg/l	ND _{interim}	0.1 Micc.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/l	NDant-ours	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/l	0.20	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mg/l	NDamen	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDxm	1.0 Max.	IS 3025(P-42)-1992
19	Vanadium (as V)	mg/l	NDancesti	0.2 Max.	APHA (23 rd Edition), 2017,
20	Benzene (as C ₆ H ₆)	mg/l	ND0.01-estra	0.1 Max.	3111D APHA (23 rd Edition), 2017,
21	Banzo a-pyrene (BaP)	mg/l	NDameson	0.2 Max.	6200B APSIA (23 rd Edinory, 2017, 6410B
		End	of Report		Authorised Signatory

The Result Indicated above rate to the tested sample and listed test parameters only, endorsement of products is maken interest not implied.
Total liability of our laboratory is involved to the involce amount.
This report shall not be reproduced woully or in part without written consent of the laboratory.
This report shall not be used in any advantaging media or as evidence in the court of law without prior written consent of the laboratory.
The ogn-personable sample received shall be destroyed after one month and personable sample shall be destroyed after one week from the date of issue of report unless specified



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com Website: www.aalkundli.com

TEST REPORT

			in other 4 days
Issued To:	M/s Indian Oil Corporation Limited	Report No. AAL WQ	T-20240423022
	(Ketineries Division) Panipat Naphtha Cracker	Date of Receiving:	23/04/2024
	Paniput (Haryana)	Date of Starting:	23/04/2024
Sample Description:	FIRE TWO SERVICES AND THE SERVICES	Date of Completion:	29/04/2024
Work order Item:	Effluent Water Sample	Date of Reporting:	29/04/2024
	PX-PTA (Table-I)	Sample Quantity:	2 Littre
Sample Collection Date:	22/04/2024	Sample Packing Condition:	Plastic Can
Sample ID:	PTA-ETP-3- Guard Pond	Sample Collected By:	AAT

		IESTR	ESULT		
S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
1	pH Value	A NA	7.55	6.5 - 8.5	IS 3025(P-11)-2022
2	Biochemical Oxygen Demand (BOD+) days at 27°C)	mg/I	25,0	30 Max.	IS 3025(P-44)-2023
3	Phenol	mg/f	0.30	1 Max.	IS 3025(P-43/S-1)-2022
4	Sulphide (as:S)	mg/l	0.24	2 Max	IS 3025(P-29)-2022
5	Chemical Oxygen Demand (COD)	mg/l	134.0	250 Max.	IS 3025(P-58)-2023
6	Cyunide (as CN)	mgd	NDani-um	0.20 Man.	APHA 4500 CN-D
3	Fluoride (as F)	mg/l	1.44	5 Max.	APHA 4500-F D
8	Total Suspended Solids	ngd	30.0	100 Max	IS 3025 (P-17)-2022
9	Hexavalent Chromium (as Cr ¹⁹)	mg/l	NDanami	0.1 Max	IS 3025(P-52)-2003
10	Total Chromium (as Cr)	nig/l	NDassasi.	2.0 Max.	IS 3025(P-52)-2003
	Milestel Demont Ltill of more things on Kind		- mandowing	-2-11 (-7-11)	10 202011 1229-2003

End of Report



The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied. Total liability of our laboratory is limited to the invoice amount. This report shall not be reproducted wholly or in part without consent of the laboratory. This report shall not be used in any advantage media as as evidence in the court of law without prior written consent of the laboratory. The non-period shall be destroyed after one month and period shall be destroyed after one month and period shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipas Naphtha Cracker, Panipat (Haryana)

Sample Description: Work order Item:

Effluent Water Sample Panipat Refinery (Table-A)

Sample Collection Date:

18/05/2024

Sample ID:

ETP1- Guard Pend

Report No.

AAL WQT-20240520029

Date of Receiving: Date of Starting:

20/05/2024 20/05/2024

Date of Completion: Date of Reporting:

27/05/2024 27/05/2024

Sample Quantity:

2 Litte

Sample Packing Condition:

Plastic Can

Sample Collected By:

AAL

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
				as per CPCB Guideline	ADMINISTRATION
I	pH Value	5	7.95	(Patroleum (M Refinery) 6.0 - 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/l	2.3	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand (BOD - 3 days at 27°C)	mg/f	13.6	15 Max.	1S 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	mg/l	87.0	125 Max.	IS 3025(P-58)+2023
5	Total Suspended Solids	mg/l	17.0	20 Max.	IS 3025 (P-17)-2022
6	Phenois	mg/l	0.15	0.35 Max.	IS 3025(P-43/S-1)-2022
7	Sulphide (as S)	mg/I	0.13	0.5 Max.	IS 3025(P-29)-2022
8	Cyanide (as CN)	mg/T	NDancass	0.20 Max.	APHA 4500 CN-D
9	Ammonia (as N)	mg/I	4.0	15 Max.	IS 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mg/l	8.6	40 Max.	IS 3025(P-34)-1988.
1.1	P	Ngm	1.10	3.0 Max.	IS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr*5)	mg/I	ND _{EDT-0.000}	0,1 Max.	IS 3025(P-52)-2003
13	Total Chromium (as Cr)	mg/l	ND _{BDE-628}	2.0 Max.	IS 3025(P-52)-2003
14	Lead (as Pb)	mg/I	NDanasa	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/l	NDastagen	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/l	0.10	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mg/l	NDanuare	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDancom	1.0 Max.	IS 3025(P-42)-1992
19	Vanadium (as V)	mg/l	NDant-een	0.2 Max.	APHA (23 rd Edition), 2017,
20	Benzene (as C ₆ H ₆)	mg/I	ND super-page	0.1 Max.	3111D APHA (23 rd Edition), 2017,
21	Banzo a-pyrene (BaP)	mg/i	NDanasan	0.2 Max.	6200B APHA (23 rd Edition), 2017, 6416B
	FROM ANTENNA ANTONION MODERN HITE.	**End of R	teport**		Authorised Signatory

Note: 1 The Result indicated above refer to the fested sample and listed text parameters only, endorsement of products is neither inferred not implied.

2. Total liability of our laboratory is limited to the invoice amount.

3. This report shall not be reproduced wholly or in plint without written consent of the laboratory.

4. This report shall not be used in any solventising media or as evidence in the court of law without prior written densent of the laboratory.

5. The non-periodic received shall be destroyed after one month and persistable sample shall be destroyed after one week from the date of issue of report unless specified



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker.

Panipat (Haryana)

Sample Description: Work order Item: Effluent Water Sample Panipat Refinery (Table-A)

Sample Collection Date:

18/05/2024

Sample ID:

ETP2- Guard Pond

Report No.

AAL WQT-20240520030

Date of Receiving:

20/05/2024 20/05/2024

Date of Starting: Date of Completion:

27/05/2024

Date of Reporting: Sample Quantity: 27/05/2024 2 Litre

Sample Packing Condition: Sample Collected By:

Plastic Can

Sample Collected By:

AAL

TEST RESULT

		(Development	ATTRICATION (SI		
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method
1	pH Value	1	7.85	(Petroleum Od Refinery) 6.0 - 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/l	2.6	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand (BOD - 3 days at 27°C)	mg/l	14.3	15 Max.	IS 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	mg/l	91.0	125 Max	IS 3025(P-58)-2023
5	Total Suspended Solids	mg/I	18.0	20 Max	IS 3025 (P-17)-2022
6	Phenols	mg/I	0.17	0.35 Max	IS 3025(P-43/S-1)-2022
7	Sulphide (as S)	mg/l	0.16	0.5 Max.	IS 3025(P-29)-2022
8	Cyanide (as CN)	mg/l	ND _{tor, opp}	0.20 Max.	APHA 4500 CN-D
9	Ammonia (as N)	mg/I	5.3	15 Max.	IS 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mg/l	11.0	40 May,	IS 3025(P-34)-1988
11	P	mg/l	1.26	3.0 Max.	IS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr**)	mg/I	NDancon	0.1 Max.	IS 3025(P-52)-2003
13	Total Chromium (as Cr)	mg/l	NDiamway	2.0 Max.	IS 3025(P-52)-2003
14	Lead (as Pb)	mg/l	NData non	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/l	NDaga-com	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mgA	0.18	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mg/l	NDERAN	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Co)	mg/l	NDanam	1.0 Max	IS 3025(P-42)-1992
19	Vanadium (as V)	mg/l	NDaoceon	0.2 Max.	APHA (23td Edition), 2017,
20	Benzene (as C _a H _a)	mg/l	NDage-ages	0.1 Max.	3111D APHA (23th Edition), 2017,
21	Banzo a-pyrene (BaP)	mg/l	NDan-mi		6200B A SAPHA (23" Edition), 2017; v SAUTOSH 6410B TAVA
	The second service of the second seco	**End	of Report**	34	Authorised Signatory

Note: 1. The Result Indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither inferred not implied.

Total liability of our laboratory is limited to the invoice amount.
 This report shall not be reproduced wholly or in part without written consent of the laboratory.

4. This report shall not be used in any advertising media or as evidence in the court of like without prior written opposent of the laboratory.

5 The number ishable sample received shall be destroyed after one month and personable sample shall be destroyed after one week from the date of libbue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker.

Panipat (Haryana)

Sample Description:

Work order Item: Sample Collection Date:

Sample ID:

Effluent Water Sample

PX-PTA (Table-1) 18/05/2024

PTA-ETP-3- Guard Pond

Report No.

AAL WQT-20240520032

Date of Receiving:

20/05/2024

Date of Starting: Date of Completion:

20/05/2024 27/05/2024

Date of Reporting:

27/05/2024

Sample Quantity:

2 Litre

Sample Packing Condition:

Plastic Can

Sample Collected By:

AAL

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
1	pH Value	1340	7.48	6.5-8.5	IS 3025(P-11)-2022
2	Biochemical Oxygen Demand (BOD - 3 days at 2°C)	mg/l	20.0	30 Max.	IS 3025(P-44)-2023
3	Phenol	mg/l	0.22	1 Max.	IS 3025(P-43/S-1)-2022
4	Sulphide (as S)	mg/l	0.15	2 Max.	IS 3025(P-29)-2022
5	Chemical Oxygen Demand (COD)	mg/l	98.0	250 Max.	IS 3025(P-58)-2023
6	Cyunide (as CN)	mg/j	NDarenn	0.20 Max.	APHA 4500 CN-D
7	Fluoride (as F)	mg/l	1.20	5 Max.	APHA 4500-F D
8	Total Suspended Solids	mg/l	24.0	100 Max.	IS 3025 (P-17)-2022
9	Hexavalent Chromium (as Cr76)	mg/l	NDisplans	0.1 Max.	IS 3025(P-52)-2003
10	Total Chromium (as Cr)	mg/l	ND _{unt-eq}	2.0 Max.	1S 3025(P-52)-2003
	KDeSign Courses CDF of course Particular Course			With Selfer	DESCRIPTION OF THE PROPERTY.

"End of Report"



The Result indicated above refer to the tested sample and listed test parameters only, endorsement of products is neither interred not implied

Total liability of our laboratory is limited to the invoice amount.

This report shall not be reproduced wholly or in part without written consent of the laboratory.
 This report shall not be used in any advertising media or as evidence in the count of law without prior written consent of the laboratory.
 The row-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page I of I

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker. Panipat (Haryana)

Sample Description: Work order Item:

Effluent Water Sample Panipat Refinery (Table-A)

Sample Collection Date:

21/06/2024

Sample ID:

ETP1- Guard Pond

Report No.

AAL WQT-20240622011

Date of Receiving: Date of Starting:

22/06/2024 22/06/2024

Date of Completion:

29/06/2024

Date of Reporting: Sample Quantity:

29/06/2024 2 Litre

Sample Packing Condition:

Plastic Can

Sample Collected By:

AAL

TEST RESULT

S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
		LNA	LYTICA	As per CPCB Guideline (Petroleum Of Befores)	>1000 E-0000 (00.000)
10	pH Value		7.90	6.0 - 8.5	1S 3025(P-11)-2022
2	Oil & Grease	mg/l_	2.1	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand	Ngm	14.2	15 Max.	IS 3025(P-44)-2023
4	Chemical Oxygen Demand (COD)	mg/I	92.0	125 Max.	IS 3025(P-58)-2023
5	Total Suspended Solids	mg/l	15.0	20 Max.	IS 3025 (P-17)-2022
6	Phonois	mg/1	0.13	0.35 Max.	IS 3025(P-43/S-1)-2022
7	Sulphide (as S)	mg/l	0.11	0.5 Max.	IS 3025(P-29)-2022
8	Cyanide (as CN)	mg/1	NDancates .	0.20 Max	APHA 4500 CN-D
9	Ammonia (as N)	mg/t	6.0	15 Max.	IS 3025(P-34)-1988
10	Total Kjefdahl Nitrogen (as N)	mg/l	10.0	40 Max.	IS 3025(P-34)-1988
1.1	8	mg/l	1.28	3,0 Max.	IS 3025(P+31)+1988
12:	Hexavalent Chromium (as Cr ¹⁶)	mg/l	NDani-m	G.I Max.	IS 3025(P-52)-2003
13	Total Chromium (as Cr)	mg/l	NDuncen	2.0 Man.	IS 3025(P-52)-2003
14	Lend (as Pb)	mg/I	ND(128,403)	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/I	ND contenen	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/l	0.14	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mp/l	NDabten	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Co)	mg/l	NDansann	1.0 Max.	IS 3025(P-42)-1992
19	Vanadium (as V)	mg/l	NDant-outs	0.2 Max.	APHA (23rd Edition), 2017,
20	Benzene (as C _n H ₆)	mg/l	NDant-1025	0.1 Max.	3111D APHA (23 rd Edition), 2017,
21	Batizo a-pyrene (BaP)	mg/l	ND _{0.20(-0.04)}	0.2 Max.	Approx (13" Edition), 2017.
	NO-Net Deposed, UDE Clarete Depotine Lines	**End of R	leport**		Authorised Signatory

The Result Indicated above refer to the tested sample and listed lest parameters only, endorsement of products is neither interred not implied.

Total liability of our laboratory is limited to the invoice amount

^{3.} This report shall not be reproduced wholly or in part without written consent of the taboratory.

4. This report shall not be used in any advertising media or as evidence in the court of law without prior written consent of the taboratory.

5. The non-perishable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified.



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Haryana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued To:

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker,

Panipus (Haryana)

Sample Description:

Work order Item:

Effluent Water Sample

Sample Collection Date:

Sample ID:

Panipat Refinery (Table-A) 21/06/2024

ETP2-Guard Pond

Report No.

AAL WQT-20240622012

Date of Receiving:

22/06/2024

Date of Starting:

22/06/2024

Date of Completion:

29/06/2024

Date of Reporting:

29/06/2024

Sample Quantity: Sample Packing Condition:

2 Litte Plastic Can

Sample Collected By:

AAL

TEST RESULT

		Contractor			
S. No.	Test parameters	Unit	Results	Permissible Limits as per CPCB Guideline	Testing Method
1	pH Value:	4 131	7.93	(Potroleum (da Refinery) 6.0 – 8.5	IS 3025(P-11)-2022
2	Oil & Grease	mg/l	2.3	5.0 Max.	IS 3025 (P-39)-2021
3	Biochemical Oxygen Demand (BOD - 3 days at 27°C)	mg/l	13.0	15 Max.	IS 3025(P-44)-2023
-#	Chemical Oxygen Demand (COD)	mg/l	82.0	125 Max.	IS 3025(P-58)-2023
3	Total Suspended Solids	mg/l	16.0	20 Max.	IS 3025 (P-17)-2022
6	Phenois	mg/l	0.17	0.35 Max.	IS 3025(P-43/S-1)-2022
2	Sulphide (as S)	mg/1	0.10	0.5 Max	IS 3025(P-29)-2022
8	Cyanide (as CN)	mg/l	ND are done	0.20 Max.	APHA 4500 CN-D
9	Ammonia (as N)	mg/l	4.0	15 Max.	IS 3025(P-34)-1988
10	Total Kjeldahl Nitrogen (as N)	mg/l	8.6	40 Max.	18 3025(P-34)-1988
11	P	mg/l	1.20	3.0 Max.	IS 3025(P-31)-1988
12	Hexavalent Chromium (as Cr*)	mg/l	ND((,0),-0.89)	0.1 Max.	IS 3025(P-52)-2063
13	Total Chromium (as Cr)	mg/t	NDuncin	2.0 Max.	15 3025(P-52)-2003
14	Lead (as Pb)	m <u>e</u> /I	ND(thicom)	0.1 Max.	IS 3025(P-47)-1994
15	Mercury (as Hg)	mg/I	NDam.som	0.01 Max.	IS 3025(P-48)-1994
16	Zinc (as Zn)	mg/l	0.12	5.0 Max.	IS 3025(P-49)-1994
17	Nickel (as Ni)	mg/I	NDageou	1.0 Max.	IS 3025(P-54)-2003
18	Copper (as Cu)	mg/l	NDuncans	1.0 Max.	IS 3025(P-42)-1992
19	Vanadium (as V)	mg/I	ND _{um,um}	0.2 Max.	APHA (23 rd Edition), 2017,
20	Benzene (as C _o H _n)	mg/l	NDansaum	O.I Max.	3111D APHA (23 ¹⁰ Edition), 2017.
21	Banzo a-pyrene (BaP)	mg/l	NDaze-eng	0.2 Max.	4PHA (23 rd Edinon), 2017.
	NOW Had Deserved: LDL-Camies Oncoriois Lines	**End	of Report**	ALCOHOLD SAME	Authorised Signatory

The Result Indicated above refer to the tested sample and listed test garanteters only, endorsement of products is centrer inferred not implied.

Total liability of our laboratory is united to the invoice amount. This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be reproduced wholly or in part without written consent of the laboratory.

This report shall not be used in any advertising made or as evidence in the court of law without prior written consent of the laboratory.

The non-pertistable sample received shall be destroyed after one month and perishable sample shall be destroyed after one week from the date of issue of report unless specified



AN ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED LABORATORY

272, Phase-IV, Sec-57, HSIIDC, Kundli, Sonepat-131028 (Harvana) Ph.: 7082301442, 9250014551 Email: aalkundli@gmail.com

Website: www.aalkundli.com

TEST REPORT

Page 1 of 1

Issued	

M/s Indian Oil Corporation Limited

(Refineries Division)

Panipat Naphtha Cracker. Panipat (Haryana)

Sample Description: Work order Item:

Effluent Water Sample PX-PTA (Table-I)

21/06/2024

Sample Collection Date: Sample ID:

PTA-ETP-3- Guard Pond

Report No.

AAL WQT-20240622021

Date of Receiving: Date of Starting:

22/06/2024 22/06/2024 29/06/2024

Date of Completion: Date of Reporting: Sample Quantity:

29/06/2024 2 Litre

Sample Packing Condition: Sample Collected By:

Plastic Can AAL

TEST RESULT

		- COURT POR	Control of the last of the las		
S. No.	Test parameters	Unit	Results	Permissible Limits	Testing Method
21	pH Value	NA	7.63	6.5 - 8.5	IS 3025(P-11)-2022
2	Biochemical Oxygen Demand (800 - 3 days at 27°C)	mg/l	22.0	30 Max.	IS 3025(P-44)-2023
3	Phenol	mg/l	0.26	1 Max.	IS 3025(P-43/S-1)-2022
4	Sulphide (as S)	mg/i	0.19	2 Max.	IS 3025(P-29)-2022
5	Chemical Oxygen Demand (COD)	mg/l	104,0	250 Mio.	IS 3025(P-58)-2023
6	Cyanide (as CN)	mg/I	NEhrouwers	0.26 Max.	APHA 4500 CN-D
7	Fluoride (as F)	mg/l	1.29	5 Max	APHA 4500-F D
8	Total Suspended Solids	mg/l	27.0	100 Max.	IS 3025 (P-17)-2022
9	Hexavalent Chromium (as Cr**)	mg/l	NDozucesi	0.1 Max.	IS 3025(P-52)-2003
10	Total Chromium (as Cr)	mg/l	NDaposta	2.0 Max.	IS 3025(P-52)-2003
	ND*Net Deletind, LDXConst Disposition Limit		-		CHAPTER TO THE PARTY OF THE PAR

"*End of Report"



The Requit Indiciated above refer to the lested sample and listed test parameters only, endorsement of products is neither informed not implied

This report shall not be used in any advertising metrics of the second o

Panipat Refinery and Petrochemical complex

Noise monitoring results

Date/Period: -24 February 2024 [Q-4-2023-2024]

		Noise results		
5. No.	Location name	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 d8A)*	
to	Gate no. 1	59.8	58.6	
2	PTA Gate:	65.7	67.9	
3	At entry of PNC flyover.	68.7	62.4	
3	Near Raw water pond (north west corner)	63.4	59.6	
5	Boundary wall (near operator cabin 4 of offsites.)	58.6	52.7	
6	Near MCR.	66.8	65.9	
7	Near Boundary wall at backside of ETP-2.	58.6	52.1	
8	Near CR-11	69.6	65.6	
9	Gate No. 2 (Time office)	57.5	52.1	
10	Store	52.4	51.8	
11	PTA control room	56.6	54.7	
12	Admin building	54.3	52.4	
13	Project building	56.7	56.2	
14	PX control room	58.9	56.4	
15	3 G Ethanol	65.7	53.8	
16	Main Gate(2G Ethanol Plant)	67.8	65.6	
17	Control Room (2G Ethanol Plant)	56.6	54.7	

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

e be

26 Occupational Health Centre

Adding

Ind. Hygienist

Panipat Refinery and Petrochemical complex

Noise monitoring results

Date/Period: -13 June 2023 (Q-1-2024-2025)

		Noise results		
S. No	LOCOTION Name	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	72.6	62.5	
2	PTA Gate.	71.5	65.2	
3	At entry of PNC flyover.	68.8	69.9	
4	Near Raw water pond (north west corner).	70.2	52.8	
5	Boundary wall (near operator cabin 4 of offsites.)	71.6	67.2	
6	Near MCR.	68.5	63.1	
7	Near Boundary wall at backside of ETP-2.	66.8	62.8	
8	Near CR-11	60.6	65.9	
9	Gate No. 2 (Time office)	59.7	60.8	
10	Store	62.9	61.6	
11	PTA control room	60.3	56.7	
12	Admin building	55.3	51.4	
13	Project building	67.8	62.3	
4	PX control room	58.7	the second	
5	3 G Ethanol		66.8	
	747.	63.4	61.6	
	Main Gate(2G Ethanol Plant)	72.8	68.9	
7	Control Room (2G Ethanol Plant)	62.5	60.8	

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

Occupational Health Centre