

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

बोंगाइगाँव रिफाइनरी

डाकघर : धालीगाँव - 783 385

जिला : चिरांग (असम)

Indian Oil Corporation Limited

Bongaigaon Refinery

P.O. : Dhaligaon, Dist. : Chirang, Assam-783385

Phone : 03664-

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रिफाइनरी प्रभाग

Refineries Division

REF: IOC/BGR/HSE/ECR-MSQI/MoEF&CC/2024-25/02

Date: 30/06/25

To

The Regional Officer,

Ministry of Environment, Forest and Climate Change,

Integrated Regional Office, Guwahati,

4th Floor, House fed Building,

GS Road, Rukminigaon Guwahati-781022

Subject: 2nd Half Yearly Report for the period (1st Oct'24 to 31st March'25) for

"MS Quality Improvement Project"

Reference: MS Quality Improvement Project (Light Naphtha Isomerisation using existing Xylene Isomerisation unit)" at Dhaligaon, Chirang, Assam by M/s Bongaigaon Refinery & Petrochemicals Ltd. vide MoEF letter No. J.11011/1171/2007-IA-II (I) dated 5/02/2008

Dear Sir,

With reference to the above, we are enclosing the Six Monthly EC compliance Report for the period of 1st October'24 to 31st March'25 for your kind perusal.

The reports are being sent as per EIA Rules'2006 for the "Environmental Clearances" issued by MoEF&CC to Bongaigaon Refinery, (BGR) for "MS Quality Improvement Project".

Thanking you,

Yours faithfully,

(Biman Gogoi)

DGM (HSE)

O/P: 03664-25-3302

M-9435122647

Copy to:

1. Member Secretary, Pollution Control Board, Assam
Bamunimaidam, Guwahati - 781 021

2. Zonal Officer, Central Pollution Control Board
Eastern Zonal Office, 'TUM-SIR', Lower Motinagar,
Near Fire Brigade H.Q.. Shillong - 793014

रजिस्टर्ड ऑफिस : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व) मुम्बई - 400 051

रिफाइनरी डिविजन : हेड क्वार्टर : इंडियन ऑयल भवन, स्कोप कंप्लेक्स, कोर - 2, 7, इन्स्टिट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003

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Refineries Division : Head Quarter : IndianOil Bhavan, SCOPE Complex, Core-2, 7, Institutional Area, Lodhi Road, New Delhi - 110 003

Half yearly Report for MS Quality Improvement Project
(1st October 2024 to 31st March 2025)



Submitted by:

Indian Oil Corporation Limited

Bongaigaon Refinery

PO: Dhaligaon. District: Chirang. Assam

G. CM (MSE)

Compliance Status w.r.t. Env. Clearance of MS Quality Improvement Project

Status Report for the period (1st October 2024 to 31st March 2025)

Environmental Clearance for "MS Quality Improvement Project (Light Naphtha Isomerisation using existing Xylene Isomerisation unit)" at Dhaligaon, Chirang, Assam by M/s Bongaigaon Refinery & Petrochemicals Ltd. vide MoEF letter No. J.11011/1171/2007-IA-II (I) dated 5/02/2008.

Project was commissioned in September 2011.

INDEX:

Sl. No	Conditions	Status
1.	Special/General Conditions and Compliance status of MS Quality Improvement Project	Annexure- A
2.	Six monthly Stack Monitoring/ Air Quality Data	Furnished in Appendix-A1
3.	Six monthly Effluent discharged Quantity, Quality	Furnished in Appendix-A2
4.	Tree Plantation Data	Furnished in Appendix-A3
5.	Quarterly Fugitive Emission Data	Furnished in Appendix-A4
6.	Annual return of Hazardous Waste	Furnished in Appendix-A5(a)
7.	Authorization from PCBA under Hazardous Waste (Management, Handling and Transboundary Movement Rules 2008)	Furnished in Appendix-A5(b)
8.	Details of Wastewater treatment and disposal system	Furnished in Appendix-A6
9.	Quarterly Noise Survey Report.	Furnished in Appendix-A7
10.	Status of Rainwater Harvesting	Furnished in Appendix-A8
11.	Screen Shot of IOCL Website upload of report	Furnished in Appendix-A9
12.	NABL certificate of QC Lab of Bongaigaon Refinery	Furnished in Appendix-A10
13.	Employees Occupational Health Checkup Status	Furnished in Appendix-A11
14.	Flare system.	Furnished in Appendix-A12

F. CM (HSE)

1.0 ANNEXURE-A

Sl. No.	Specific Conditions	Compliance Status
i	The company shall comply with new standards/norms that are being proposed by the CPCB for petrochemical plants and refineries.	Complied. Basic Design Engineering Package / Process Package have been prepared in line with the revised standards / norms for Oil Refinery and implemented in the project.
ii	The company shall comply with all the stipulations of environmental clearance issued vide File No. – 11011/375/2006-IA.II (I) dated 22 nd March 2007.	Complied BGR had advertised “Public Notice” in three local newspapers that are widely circulated in the region namely “The Assam Tribune” English daily, “Asomiya Pratidin” an Assamese daily & “Sanseyari Bodosā” a Bodo daily on 26 th February 2008. All conditions of the environmental clearance are compiled and verified by statutory agencies time to time.
iii	The process emissions (SO ₂ , NO _x , HC, VOCs and Benzene) from various units shall conform to the standards prescribed by the Assam State Pollution Control Board from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Complied. Detailed Engineering for the project was carried out considering the revised standards / norms for Oil Refinery and conditions /guidelines issued by SPCB. Environment Monitoring and control facilities are installed to achieve the stipulated standards. Emission and ambient air (VOC) data attached as Appendix-A1. HC Fugitive data in Appendix-A4.
iv	The improvement project shall be through the retrofitting of existing Xylene fractionation, Isomerisation and Parex units and within the existing land.	Complied. The improvement project is only through the retrofitting of existing Xylene Fractionation, Isomerisation and Parex units and within the existing land.
v	Quarterly monitoring of fugitive emissions shall be carried out as per the guidelines of CPCB by fugitive emission detectors (GMI Leak Surveyor) and reports shall be submitted to the Ministry’s regional office at Shillong.	Complied. Quarterly monitoring of fugitive emissions is being carried out. Quarterly reports for the period of 1 st October 2024 to 31 st March 2025 are attached as Appendix-A4.
vi	For control of fugitive emission all unsaturated hydrocarbon will be routed to the flare system and the flare system shall be designed for smoke less burning.	Complied. Taken care during implementation of the project.
vii	The company shall strictly follow all the recommendation mentioned in the charter on corporate responsibility for environmental protection (CREP)	Complied. The company followed all the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) prior to coming of the Revised Standards applicable to refinery for Environment Protection.
viii	Occupational health surveillance of worker shall be done on a regular basis and records maintained as per the Factory Act.	Complied. Occupational health surveillance of the workers is done on a regular basis and records maintained as per the Factories Act. The reports attached as Appendix-A11.

(Signature)
MCHSE

Sl. No.	Specific Conditions	Compliance Status
ix	Greenbelt shall be developed to mitigate the effect of fugitive emission all around the plant in a minimum 30% plant area in consultation with DFO as per CPCB guidelines.	<p>Greenbelt is already in existence with more than 30% of plant area having green cover.</p> <p>Tree Census has been carried out through DFO Chirang District in 2013 where 84545 Nos. of grown up trees were enumerated.</p> <p>Post INDMAX & BS-VI project, following plantation done to achieve required greenbelt.</p> <ul style="list-style-type: none"> ❖ Year 2017-18: 29600 nos. of saplings ❖ Year 2018-19: 30060 nos. of saplings ❖ Year 2019-20: 14340 nos. of saplings ❖ Year 2020-21: 25606 nos. of saplings ❖ Year 2021-22: 1,00,000 nos. of saplings (Including outside location from the refinery, township & North side of the INDMAX Unit: 11,500 saplings planted) ❖ Year 2022-23: 27610 nos. of saplings planted ❖ Year 2023-24: 100630 nos. of saplings planted ❖ Year 2024-25: 107530 nos. of sapling planted
x	The Company shall make the suitable arrangement for disposal of catalyst waste and alumina balls. The report of waste disposal shall be submitted to Ministry's Regional Office at Shillong.	<p>Complied.</p> <p>Please refer Appendix-A5(a).</p>
xi	The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.	<p>Complied.</p> <p>Necessary measures are in place to prevent fire hazards and containment of oil spill.</p> <p>Overhead flaring stack with knockout drums is available</p> <p>Please refer Appendix-A12.</p>
xii	To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material shall be in place.	<p>Complied.</p> <p>All necessary precautions are in place as per OISD Guidelines.</p>

B. General Conditions:

Sl. No.	General Conditions	Compliance status
i	The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government and any other statutory body.	<p>Complied.</p> <p>Taken care during implementation of the project.</p>
ii	No further expansion or modification in the project shall be carried without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry.	<p>Complied.</p> <p>EC was granted by MoEF&CC to BGR for IndMax & BS-VI projects vide letter F. No. J11011/48/2016-IA-II (I), Dated 19th Apr'2017.</p> <p>The project aims to enhance expansion of Crude processing from 2.35 to 2.7 MMTP, other associated projects, e.g. DHDT capacity from 1.2 to 1.8 MMTP, HGU from 25 KTPA to 30 KTPA, CRU-MSQ revamp and SDS(SRU) unit.</p> <p>All the units of the Project commissioned successfully.</p>

F. CMCHSE

Sl. No.	General Conditions	Compliance status
iii	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system, the respective well site should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved. Provision of adequate height of stack attached to DG sets & flare is to be done.	Complied. It has been taken care during implementation of the project. Emission data for the period of 1 st October 2024 to 31 st March 2025 are attached as Appendix - A1. No DG set was installed for the project.
iv	Wastewater shall be properly collected and treated so as to conform to the standards prescribed under EP Act & Rules and mentioned in the Consents provided by the relevant SPCB.	Complied. Waste water treatment and disposal system is designed to conform to this norm. No Treated Effluent water is discharged outside. 100% reused within the complex. Detail of Wastewater treatment and disposal system is attached as Appendix-A6. Treated Effluent water quality from refinery is attached as Appendix-A2.
v	The overall noise levels in and around the premises shall be limited within the prescribed standards (75 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 (daytime) and 70 dBA (nighttime).	Complied. It has been taken care during implementation of the project. Quarterly Noise Survey is being carried out regularly. Quarterly Reports for the period of 1 st October 2024 to 31 st March 2025 are attached as Appendix-A7.
vi	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2008 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project, if required. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	Complied. The rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 are being complied. Approved Emergency Response & Disaster Management Plan (ERDMP) is in place at BGR to handle any unforeseen situation due to oil spill and mock drills (on-site & off-site) conducted quarterly on various emergency scenarios. Onsite & offsite Mock drills for FY 24-25 (Q-1, Q-2, Q-3 & Q-4) conducted on 22/06/24, 25/09/24, 31/12/2024 & 07/03/2025 respectively.
vii	Disposal of hazardous wastes shall be as per the Hazardous Wastes (Management and Handling) Rules, 2008. Authorization from the State Pollution Control Board must be obtained for collections / treatment/storage/ disposal of hazardous wastes.	Complied. Disposal is being done as per HW rules 2016 Authorization under Hazardous and Other Waste (Management, and Transboundary Movement) Rules 2016 obtained from PCBA and valid up to 31 st March 2027. Copy attached as Appendix-A5(b).
viii	The project authorities will provide adequate funds as non-recurring and recurring expenditure 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.	Complied. Sufficient fund is being made available at the time of implementation and operational phase of the project

f. CM(HSE)

Sl. No.	General Conditions	Compliance status
ix	The company shall develop rainwater harvesting structures to harvest the runoff water for recharge of ground water.	<p>Complied.</p> <ul style="list-style-type: none"> Four more roof top RWH scheme have been commissioned during FY 2020-21. Total 45 nos. of Rainwater Harvesting Projects have been implemented so far in BGR covering area of 66057.05m² potential rainwater harvesting volume of 190905.5m³. The harvested rainwater for ground water recharge is through recharge pits and recharge trench based on technical details and guidelines from Central Ground Water Board, Northeastern Region, Guwahati. Details attached as Appendix-A8.
x	The stipulated conditions will be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly. It will also be displayed on the Website of the Company.	<p>Complied.</p> <p>Soft copy of last six monthly compliance reports was submitted and has been uploaded in IOCL website. Ref: Appendix-A9</p>
xi	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 & 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 concerned Regional office of this Ministry.	<p>Complied.</p> <p>BGR had advertised "Public Notice" in three local newspapers that are widely circulated in the region namely "The Assam Tribune" English daily, "Asomiya Pratidin" an Assamese daily & "Sanseyari Bodosa" a Bodo daily on 26th February 2008.</p> <p>The information is already submitted to statutory agencies.</p>
xii	A separate environment management cell with full-fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.	<p>Complied.</p> <p>BGR has a separate environmental management cell of HSE department and fully fledged laboratory to carry-out environment management and monitoring functions.</p> <p>A well-equipped Laboratory exists in the complex. The Laboratory of BGR is accredited by NABL. Appendix-A10</p>
xiii	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	<p>Complied.</p> <p>Last capitalization date was 08/01/2015.</p> <p>Project was commissioned in September, 2011</p>

G. CMCHSE

STACK MONITORING DATA: (1stOctober 2024 to 31st March 2025)A. SO₂ Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For Existing Refineries For F.O. = 1700 For F.G. = 50 For New Refineries For F.O. = 850 For F.G. = 50	4.12	36.3	376.06
DCU-I		9.0	19.32	32.0
CDU-II		2.92	5.21	21.20
DCU-II		0.27	5.97	45.81
CPP		0.0	10.24	27.68
HOT-1		0.12	104.58	283.75
Reformer		34.96	35.00	35.06
HOT-2		Shut Down		
Isomerization		0.06	4.73	17.85
DHDT		7.0	8.41	10.15
HGU		6.05	6.97	11.70
NEW SRU		312.0	312.0	312.0
GTG		0.01	8.28	14.38
IGHDS		2.02	6.96	129.30
NHT		6.98	7.0	7.05
INDMAX		1.99	16.26	31.09

B. NO_x Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For Existing Refineries For F.O. = 450 For F.G. = 350 For New Refineries For F.O. = 350 For F.G. = 250	3.2	18.63	38.62
DCU-I		5.01	21.78	39.03
CDU-II		6.91	30.63	199.18
DCU-II		13.28	13.54	13.68
CPP		33.48	33.50	33.52
HO-1		0.81	79.84	114.62
Reformer		33.99	34.65	37.19
HO-2		Shut Down		
Isomerization		5.26	7.90	10.22
DHDT		4.39	5.66	7.25
HGU		6.72	24.77	67.22
NEW SRU		N/A		
GTG		15.99	16.02	16.31
IGHDS		17.97	38.44	76.54
NHT		NR	NR	NR
INDMAX		13.54	22.26	22.39

G. ENCASE)

C. PM Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For Existing Refineries For F.O. = 100 For F.G. = 10 For New Refineries For F.O. = 50 For F.G. = 5	0.9	4.4	17.3
DCU-I		0.7	0.7	0.7
CDU-II		0.9	1.0	1.0
DCU-II		8.1	8.1	8.1
CPP		1.4	1.6	1.7
HO-1		1.6	9.1	24.7
Reformer		2.7	2.7	2.7
HO-2		Shut Down		
Isomerisation		1.3	1.3	1.3
DHDT		2.3	2.3	2.3
HGU		8.8	22.0	33.8
NEW SRU		7.4	7.4	7.4
GTG		0.2	10.0	14.0
IGHDS		0.8	0.9	0.9
NHT		7.1	8.0	8.2
INDMAX		0.0	12.7	27.0

D. CO Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For Existing Refineries For F.O. = 200 For F.G. = 150 For New Refineries For F.O. = 150 For F.G. = 100	9.3	10	73.7
DCU-I		1.8	3.0	4.3
CDU-II		0	10.5	70.8
DCU-II		2.0	2.0	2.0
CPP		18.0	18.0	18.0
HO-1		14.9	18.0	157.1
Reformer		12.5	13.0	14.3
HO-2		Shut Down		
Isomerisation		12.0	15.8	20.2
DHDT		2.7	6.3	10.8
HGU		9.6	20.1	34.9
NEW SRU		29	29	29
GTG		0.8	4.8	10.7
IGHDS		2.0	3.3	6.6
NHT		18.2	20.1	22.3
INDMAX		0.0	5.2	6.3

(f. CMCHSE)

E. Ni + V Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 5	BDL	BDL	BDL
DCU-I		BDL	BDL	BDL
CDU-II		BDL	BDL	BDL
DCU-II		BDL	BDL	BDL
CPP		BDL	BDL	BDL
HO-1		BDL	BDL	BDL
Reformer		BDL	BDL	BDL
HO-2		Shut Down		
Isomerisation		BDL	BDL	BDL
DHDT		BDL	BDL	BDL
HGU		BDL	BDL	BDL
NEW SRU		BDL	BDL	BDL
GTG		BDL	BDL	BDL
IGHDS		BDL	BDL	BDL
NHT		BDL	BDL	BDL
INDMAX		BDL	BDL	BDL

AMBIENT AIR QUALITY AROUND BGR COMPLEX
(1st October 2024 to 31st March 2025)

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartola Rail Gate	Near TW No.7 in Township
1	SO₂ (Std. 50/80 µg/m³)						
	Min	0.69	18.9	16.4	21.5	20.7	16.48
	Average	1.51	23.61	21.06	27.7	25.46	20.81
	Max	7.34	28.50	25.60	34.6	31.8	26.6
	No. of observation	Continuous	53	53	53	53	53
2	NO₂ (Std. 40/80 µg/m³)						
	Min	2.59	24.6	18.8	23.4	22.5	18.5
	Average	2.60	30.8	26.2	33.8	32.9	25.3
	Max	2.61	35.1	32.3	41.0	39.4	33.2
	No. of observation	Continuous	53	53	53	53	53
3	PM-10 (Std. 60/100 µg/m³)						
	Min	24.18	70.8	68.4	65.4	70.9	46.8
	Average	31.30	80.3	79.1	84.7	83.3	61.5
	Max	50.25	89.9	87.7	96.4	92.3	86.8
	No. of observation	Continuous	53	53	53	53	53

G. CMCHSE)

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartola Rail Gate	Near TW No.7 in Township
4	PM-2.5 (Std. 40/60 $\mu\text{g}/\text{m}^3$)						
	Min	8.87	25.3	23.1	27.2	27.8	21.5
	Average	19.36	30.2	28.1	37.4	32.5	26.2
	Max	41.51	36.8	32.9	43.2	37.8	31.2
	No. of observation	Continuous	53	53	53	53	53
5	Ammonia (Std. 100/400 $\mu\text{g}/\text{m}^3$)						
	Min	0.69	27.4	20.9	27.1	28.8	21.2
	Average	1.51	33.2	29.8	38.0	35.7	29.2
	Max	7.34	42.2	38.8	48.2	45.6	38.4
	No. of observation	Continuous	53	53	53	53	53
6	Pb (Std. 0.5/1.0 $\mu\text{g}/\text{m}^3$)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		53	53	53	53	53
7	Arsenic (As) (Std. 6 ng/m^3)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		53	53	53	53	53
8	Ni (Std. 20 ng/m^3)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		53	53	53	53	53
9	CO (Std. 2/4 mg/m^3)						
	Min	0.99	1.02	0.95	0.25	1.05	0.98
	Average	1.05	1.23	1.16	1.33	1.27	1.17
	Max	1.33	1.39	1.29	1.64	1.47	1.39
	No. of observation	Continuous	53	53	53	53	53

F. CMCHSE

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartola Rail Gate	Near TW No.7 in Township					
10	Ozone (Std.100/180 µg/m³ for 8 hrs/1 hr)											
	Min	34.96	18.5	15.4	19.4	20.2	14.2					
	Average	35.03	23.7	21.1	27.9	25.8	20.1					
	Max	35.09	31.2	25.5	34.1	31.5	31.2					
	No. of observation	Continuous	53	53	53	53	53					
11	Benzene (Std. 5 µg/m³)											
	Min	0.55	BDL	BDL	BDL	BDL	BDL					
	Average	0.65	BDL	BDL	BDL	BDL	BDL					
	Max	0.69	BDL	BDL	BDL	BDL	BDL					
	No. of observation	Continuous	53	53	53	53	53					
12	Benzo (a) Pyrene (Std. 1 ng/m³)											
	Min		BDL	BDL	BDL	BDL	BDL					
	Average		BDL	BDL	BDL	BDL	BDL					
	Max		BDL	BDL	BDL	BDL	BDL					
	No. of observation		53	53	53	53	53					
Average of Six Stations												
Parameter	SO2	NO2	PM-10	PM-2.5	NH3	Pb	As	Ni	Benzo (a) Pyrene	CO	C6H6	O3
Unit	µg/m³					ng/m³				mg/m³	µg/m³	
NAAQ Std. 2009	50/80	40/80	60/100	40/60	100/400	0.5/1.0	Max 6	Max 20	Max 1	2/4	Max 5	100/180
Min	0.69	2.59	24.18	8.87	1.69	BDL	BDL	BDL	BDL	0.25	0.55	14.20
Average	20.03	25.28	70.03	28.95	27.94	BDL	BDL	BDL	BDL	1.20	0.65	25.58
Max	34.60	41.0	96.40	43.20	48.20	BDL	BDL	BDL	BDL	1.64	0.69	35.09

G. emchase)

3.0 APPENDIX-A2

Effluent Discharged (in m³/hr): (1st October 2024 to 31st March 2025)

A	Industrial Effluent, m ³ /hr	108.31
B	Domestic Effluent from BGR Township, m ³ /hr	66.69
C	Total Effluent Treated (A + B), m ³ /hr	175
D	Treated Effluent Reused, m ³ /hr	175
E	Effluent Discharged, m ³ /hr	0.00
F	m ³ of Effluent discharged for 1000 MT of Crude processed	0.00

A. Treated Effluent Quality (1st October 2024 to 31st March 2025)

Sl. No	Parameter	Std,2008	Min	Avg.	Max
1	pH value	6.0 - 8.5	6.5	7.2	8.5
2	Oil and Grease, mg/l	5.0	1.6	3.5	4.9
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	4	10.3	14.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	30	64.8	117.1
5	Suspended Solids, mg/l	20.0	3.4	10.3	18.8
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	0.1	0.2	0.4
7	Sulphide (as S), mg/l	0.50	0.0	0.3	0.5
8	CN, mg/l	0.20	0	0	0
9	Ammonia as N, mg/l	15.0	1.6	2.5	3.2
10	TKN, mg/l	40.0	2.8	3.7	4.6
11	P, mg/l	3.0	0.8	0.9	1.0
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.2	0.3	0.4
17	Ni, mg/l	1.0		BDL	
18	Cu, mg/l	1.0	0.0	0.1	0.2
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

6 CMCHSE

B. Final Outlet (From the Complex) Storm Water channel Quality
(1st October 2024 to 31st March 2025)

Sl. No.	Parameter	Std 2008	Min	Avg.	Max
1	pH value	6.0 - 8.5	7.29	7.39	7.55
2	Oil and Grease, mg/l	5.0	2.0	2.67	4.00
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	12.0	13.33	14.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	60.0	72.33	80.0
5	Suspended Solids, mg/l	20.0	BDL	BDL	BDL
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	BDL	BDL	BDL
7	Sulphide (as S), mg/l	0.50	BDL	BDL	BDL
8	CN, mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N, mg/l	15.0	2.40	3.10	3.90
10	TKN, mg/l	40.0	3.40	4.30	5.80
11	P, mg/l	3.0	1.0	1.10	1.30
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.20	0.35	0.56
17	Ni, mg/l	1.0		BDL	
18	Cu, mg/l	1.0	0.05	0.14	0.24
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

G. MCHSE

4.0 APPENDIX-A3: Tree Plantation (1st October 2024 to 31st March 2025)

The entire area inside BGR covered with greenery through massive plantation activities. Through massive plantation work and by giving protection to natural forest growth inside BGR premises, the entire area has become green. The entire plant area where processing plant facilities do not exist has a green cover. This helps in reduction of noise and air pollution level in one hand while on the other hand provides protection to ecological features of the area. The refinery has an excellent quality environment around its complex. Natural greenery can be seen all around the complex as well as in BGR Township in all seasons of the year.

Tree Census was done by Divisional Forest Office, Chirang in the year 2012-13. As per census, 84545 numbers of plants which include trees including shrubs, ocular estimated 33000 numbers of bamboos in 1150 no. bamboo culms and trees, planted by BGR during 2003 to 2012.

To comply INDMAX BS-VI EC conditions, BGR planted 29600 No.s of saplings in the FY 2017-18, 30,062 No.s in FY 2018-19, 14340 No.s in FY 2019-20, 25606 No.s in FY 2020-21, 1,00,000 No.s in FY 2021-22, 26710 No.s in FY 2022-23, 100630 No.s in FY-2023-24 while in FY 2024-25, BGR planted 107530 No.s of tree saplings in and around the complex.

Tree Plantation 2017-18



Birhangaon State Dispensary Plantation 10000 No. s in Aug'2017 and 5375 No. s (2nd Phase in August,2019), Sapling Planted by Miyawaki Method, Growth in March 2025.

(FAMCHSE)

Tree Plantation 2018-19



BGR TOWNSHIP PLANTATION, Planted Van Mahotsav 2018, Growth in March 2025.

Tree Plantation 2019-20



North Bongaigaon High School, 5250 Sapling Planted by Miyawaki Method in the month of September, 2019, Growth in March 2025.

Planted on WED'2021, in BGR Township, Growth in March 2025.

Tree Plantation 2021-22



Planted on Aug,2021, in the complex, North side of INDMAX & BS-VI, Growth in March 2025.

Tree Plantation 2021-22



Planted on Aug,2021, in the complex, North side of INDMAX & BS-VI, Growth in March 2025.

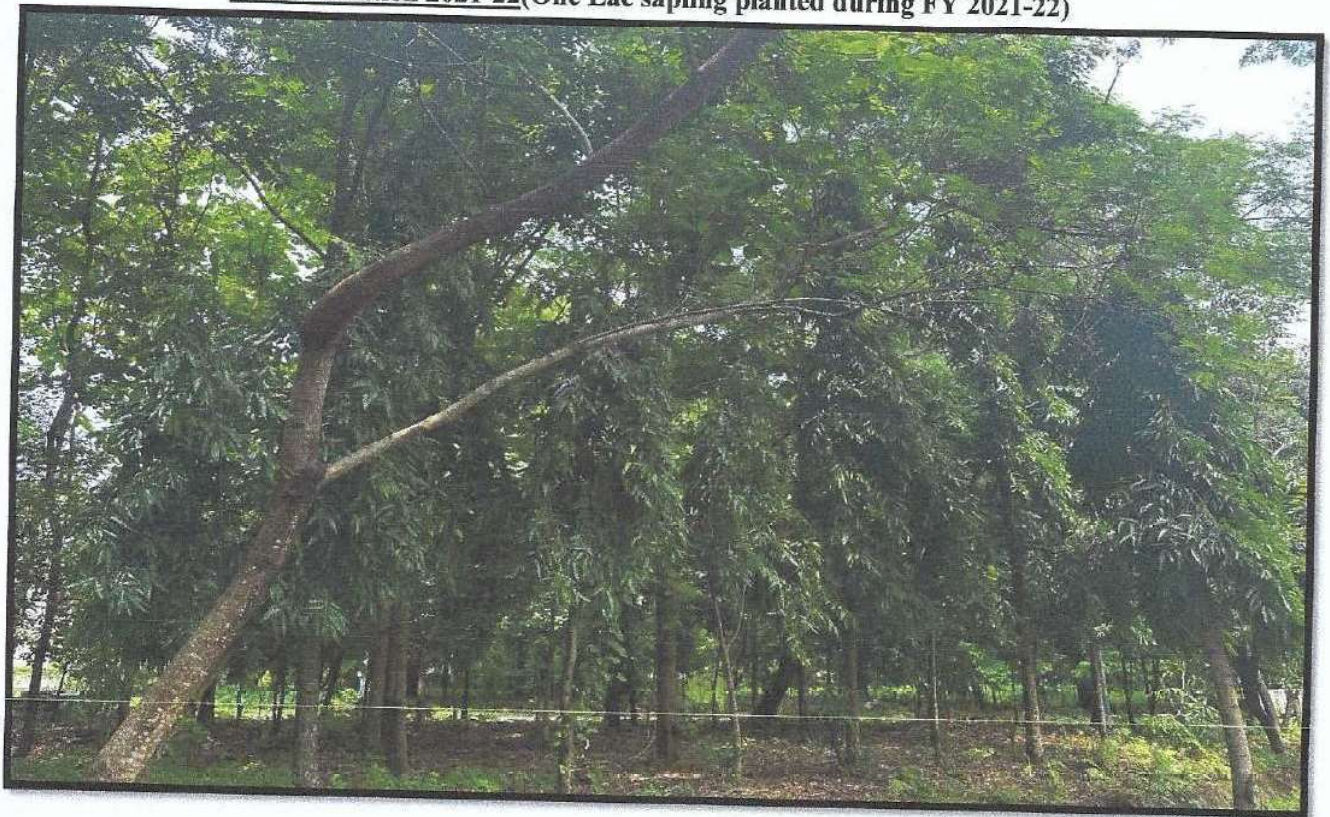
G.

Tree Plantation 2020-21



4810 No.s of sapling Planted in the month of August'2020 at Hatipota Brahma Mandir, Growth in March 2025.

Tree Plantation 2021-22(One Lac sapling planted during FY 2021-22)



G. CM(HSE)

Tree Plantation 2022-23



Planted on WED'2022, in BGR Township, Growth in March 2025.

(P. CMCHSE)

5.0 APPENDIX-A4: Quarterly Fugitive Emission Survey Data (LDAR)
(1stOctober 2024 to 31stMarch, 2025)



IOCL Fugitive
Emission Report Q-4



IOCL Fugitive
Emission Report Q-3

G. CMCHSE)

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

बोंगाइगाँव रिफाइनरी

डाकघर : धालीगाँव - 783 385

जिला : चिरांग (असम)

Indian Oil Corporation Limited

Bongaigaon Refinery

P.O. : Dhaligaon, Dist. : Chirang, Assam-783385

Phone : 03664-

E-mail :

Website : www.iocl.com FAX : 03664-



रिफाइनरी प्रभाग

Refineries Division

BGR/HSE/HW-RETURN/Fy 24-25/ 01

Date: 30.06.25

To

The Member Secretary,
Pollution Control Board, Assam
Bamunimaidam
Guwahati - 781021

Subject: Regarding Submission of Annual Hazardous Waste Return for Fy 2024-25 in Form-4 along with filled in Format A, B & C as per Hazardous and Other Waste (Management and Transboundary Movement) Rules'2016

Dear Sir,

Please find enclosed herewith the copy of Annual Hazardous Waste Return for Fy 2024-25 in Form-4 along with the filled in Format A,B,C as per Hazardous and Other Waste (Management and Transboundary Movement) Rules'2016 for the period from 1st April'24 to 31st March'25.

Thanking You,

Yours faithfully

(Biman Gogoi)

Dy. General Manager (HSE)

IOCL Bongaigaon Refinery

Ph- 03664 25 3302

Copy to:

1. Zonal Officer, Central Pollution Control Board,
Eastern Zonal Office, 'TUM -SIR', Lower Motinagar
Near Fire Brigade H.Q
Shillong—793014
2. The Regional Executive Engineer
Regional Laboratory cum office
Pollution Control Board, Assam
Ratnawali Heights (1st floor)
(Opposite Birjhora HS School)

रजिस्टर्ड ऑफिस : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व) मुम्बई - 400 051
रिफाइनरी डिविजन : हेड क्वार्टर : इंडियन ऑयल भवन, स्कोप कॉम्प्लेक्स, कोर - 2, 7, इंस्टिट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003

Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East) Mumbai-400 051
Refineries Division : Head Quarter : Indian Oil Bhavan, SCOPE Complex, Core-2, 7, Institutional Area, Lodhi Road, New Delhi - 110 003

CMCHSE

6.0 APPENDIX-A5(a): Annual return of hazardous waste (2024-25)



HW Return FY
2024-25.pdf

G. CMCHSE)

7.0 APPENDIX-A5 (b): Authorization from PCBA for Hazardous Waste (Management and Transboundary Movement) Rules 2016
No. WB/BONG/T-748/19-20/109



Pollution Control Board:: Assam
Bamunimaidam; Guwahati-21
(Department of Environment & Forests:: Government of Assam)
Phone: 0361-2652774 & 3150318; Fax: 0361-3150319
Website: www.pcbassam.org



No. WB/T-311/21-22/ 252

Dated Guwahati the, 08.09.2022

FORM - 2
[See Rule 6(2)]

[Grant of Authorization under the Provision of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016]

1. Number of Authorisation and date of issue : No. WB/T-311/21-22/ dtd. .09.2022
2. Reference of application (No. and date) : 634914
3. M/s Indian Oil Corporation Limited (IOCL), Bongaigaon Refinery, NH 31C (New NH 27), Dhaligaon, Chirang is hereby granted an authorisation based on the signed inspection report for Generation, storage and transportation of Hazardous or Other wastes or both.

DETAILS OF AUTHORISATION

Sl. No.	Category of Hazardous Waste as per the Schedules-I, II & III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity (ton/annum)	Mode of Management
1	Schedule-I, Sl.No. 4.1 : Oil sludge or emulsion	Generation, Storage & Transportation	7000 MT/Annum	Transportation to authorized actual user/Recyclers/ Disposal agencies/ reprocessing and recovery/Captive treatment through Bio-remediation as per prescribed norms
2	Schedule-I, Sl.No. 4.2: Spent catalyst	Generation, Storage & Transportation	2500 MT/Annum	Transportation to authorized actual user/Recyclers in accordance with HOCWM Rules 2016
3	Schedule-I, Sl.No. 4.3: Slud Oil	Generation, Storage & Transportation	32000 MT/Annum	Captive Utilization as per prescribed norms
4	Schedule-I, Sl.No. 5.1: Used or spent oil	Generation, Storage & Transportation	20 MT/Annum	Transportation to authorized actual user/Recyclers
5	Schedule-I, Sl.No. 33.1: Empty barrels/containers/liners contaminated with hazardous chemicals/wastes	Generation, Storage & Transportation	7000 numbers/Annum	Transportation to authorized actual user/Recyclers

4. This authorisation shall be in force in force for the period of five years up to 31.03.2027 unless otherwise revoked or withdrawn within this period.
5. The authorisation is subject to the following general and specific conditions:

A. GENERAL CONDITIONS OF AUTHORISATION:

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization.
4. The agencies should ensure that the barrels are decontaminated before collection in the premises of the occupier / generator equipped with adequate effluent treatment plant.
5. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorization.
6. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time
7. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time

13343

PCBA



The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"

9. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
 10. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
 11. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
 12. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
 13. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
 14. An application for the renewal of an authorisation shall be made as laid down under these Rules.
 15. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
 16. Annual return shall be filed by June 30th for the period ensuing 31st March of the year.
- B. SPECIFIC CONDITIONS:**
1. The unit shall maintain the records of Hazardous & Other Wastes in Form-3 under provision of Rules 6(5), 13(7), 14(6), 16(5) & 20(1)
 2. The unit shall provide the Transporter with the relevant information in Form-9 regarding the hazardous nature of the wastes and measures to be taken in case of an emergency
 3. The unit shall submit Annual Returns in Form-4 to State Pollution Control Board by 30th June of every year for the preceding period April to March.
 4. The unit shall prepare 6 (six) copies of the manifest in Form-10 as per Rules-19(1) for every transit of consignment of hazardous Waste under this authorization.
 5. Any other conditions for compliance as per the guidelines issued by the Ministry of Environment, Forests & Climate Change, GOI, New-Delhi & Central Pollution Control Board, Delhi shall be complied.
 6. The unit shall submit an Environmental Statement for the financial year ending on 31st March, in Form-V of the Environment (Protection) Rules, 1986 before 30th September every year.
 7. Any occupier handling hazardous or other wastes and operator of the treatment, storage and disposal facility shall ensure that the hazardous and other wastes are packaged in a manner suitable for safe handling, storage and transport as per the guidelines issued by the Central Pollution Control Board from time to time. The labelling shall be done as per Form 8.
 8. The unit shall submit the report on any accident occurs at their facility immediately to the state Pollution Control Board, in Form-11 of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
 9. The transport of the hazardous and other waste shall be in accordance with the provisions of Rule 18 of Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.
 10. The unit shall install a display board in the prescribed format in accordance with PCBA notification vide, WB/T-237/ 19-20/95 dated 17.08.2020 and regularly update the same.

(Shantanu Kr. Dutta)
Member Secretary

Memo No. WB/T-311/21-22/ 252-A

Dated Guwahati the 18th September, 2022

Copy to:

- ✓ M/S Indian Oil Corporation Limited (IOCL), Bongaigaon Refinery, NH 31C (New NH 27),
Dhaligaon, Chirang (Assam) for information & necessary action.

(Shantanu Kr. Dutta)
Member Secretary

G. CM(HSE)

8.0 APPENDIX-A6: Detail of Wastewater treatment and disposal system.



ETP Description.pdf

G. CMCHSE)

9.0 APPENDIX-A7: Quarterly Noise Survey Data (1st October, 2024 to 31st March 2025)



IOCL Noise Report
Q-4.pdf



IOCL Noise Report
Q-3.pdf

R. CHSE

10.0 APPENDIX-A8: Rainwater Harvesting Data

Sl. No.	Name of RWH Site location	Nos. of RHW system	Area (In m ²)	Estimated approximate ground water recharge potential volume (m ³ /year) based on avg. annual rainfall MD data for the last 10 yrs
A	At Township area			
1	Manjeera GH	1	677	1956.53
2	Deosri GH	4	581	1679.09
3	Manas Guest House	2	639	1846.71
4	BGR HS School, BGR	2	1361	3933.29
5(A)	DPS Block-I (Old)	1	704	2034.56
5(A)	DPS Block-I (New)	2	808.75	2337.2875
5(B)	DPS Block-II	3	1810	5230.9
6	Champa Club (Officers Club)	2	1100	3179
7	Refinery Club cum Community Centre	3	2580	7456.2
8	Employee Union Conference Hall Building	1	275	794.75
9	CISF Office	2	825	2384.25
10	CISF Barrack	4	1050	3034.5
11	BGR Community Centre	2	650	1878.5
12	Sports complex (Football and volleyball Stadium Gallery)	2	988	2855.32
13	Rainwater Harvesting at Mandir Complex Pond	1	7125	20591.25
14	Mandir Complex	1	833	2407.37
15	Temple Complex (NEW)	1	10151	29336.39
16	Cooperative Store/Shopping Complex (Newly constructed in Oct'24)	1	210	606.9
17	BGR Hospital (Newly constructed in Oct'24)	1	736	2127.04
B	At Refinery area			
18	Admin. Block - B Plan	1	1730	4999.7
19	BGR Canteen (Ref.)	2	3134	9057.26
20	CISF Office & Scooter Shed (Ref.)	1		
21	Cycle Stand (Near time office)	1		
22	Control Room BS-VI - Plant	1	1372.5	3966.525
23	Substation BS-VI - Plant	1	942	2722.38
24	Parvesh Udyan pond	1	5775	16689.75
25	Eco Park Pond including natural pond	1	20000	57800
	Total	45	66057.25	190905.5

G. CMCHSE)

Statutory Notices

- ETBPL Capacity Determination compliance report as per Schedule-I, under regulation 4(1) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 30.04.2025. [Content in English \(209 KB\)](#)
- ETBPL Capacity Determination compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 31.05.2025. [Content in English \(223 KB\)](#)
- DPPL Capacity Declaration compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 01.04.2025. [Content in English \(420 KB\)](#)
- ETBPL Capacity Determination compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 28.02.2025. [Content in English \(222 KB\)](#)
- ETBPL Capacity Declaration compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 01.02.2025. [Content in English \(447 KB\)](#)
- ETBPL Capacity Determination compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 31.01.2025. [Content in English \(219 KB\)](#)
- Six Monthly EC Compliance Reports of Panipat Refinery and Petrochemical Complex (2nd Half, July'24 to Dec'24).
 - Six Monthly EC Compliance (Panipat Refinery) 2nd Half, July'24 to Dec'24. [Content in English \(13 MB\)](#)
 - Six Monthly EC Compliance (Panipat Petrochemical Complex) 2nd Half, July'24 to Dec'24. [Content in English \(10.4 MB\)](#)
- DPPL Capacity Declaration compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 01.01.2025. [Content in English \(505 KB\)](#)
- Half Yearly EC compliance report of Paradip Refinery for Apr'24 - Sep'24. [Content in English \(15 MB\)](#)
- Gujarat Refinery Six monthly EC Compliance (for the period of Apr 2024- Sep 2024) of listed projects to MoEF&CC dated 30.11.2024. [Content in English \(700 KB\)](#)
 - Gujarat Refinery - Movali Site : Environment statement for the Financial year 2023-24. [Content in English \(4.78 MB\)](#)
 - Gujarat Refinery - Dumas Site : Environment statement for the Financial year 2023-24. [Content in English \(1.44 MB\)](#)
- ETBPL Capacity Determination compliance report as per Schedule-I, under regulation 4(2) of the petroleum and Natural Gas Regulatory (Access code for Common carrier or Contract carrier Natural Gas Pipelines) Regulations, 2008 as on 31.12.2024. [Content in English \(219 KB\)](#)
- Six monthly EC compliance reports of IOCL Bongaigaon Refinery (1st half of FY 2024-25)
 - Six Monthly Compliance Report of Refinery-II 1st half of 2024-25. [Content in English \(2.47 MB\)](#)
 - Six Monthly Compliance Report of DHD project, 1st half of 2024-25. [Content in English \(2.37 KB\)](#)
 - Six Monthly Compliance Report of Indian 6 BS-VI Project 1st half of 2024-25. [Content in English \(2.63 KB\)](#)
 - Six Monthly Compliance Report of FMS Quality improvement project 1st half of 2024-25. [Content in English \(2.46 KB\)](#)
 - Six Monthly Compliance Report of MS Maximisation Project 1st half of 2024-25. [Content in English \(2.14 MB\)](#)

F. CMCHSE

12.0 APPENDIX-A10: NABL certificate of QC Lab of Bongaigaon Refinery



National Accreditation Board for
Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

**INDIAN OIL CORPORATION LIMITED, QC LABORATORY,
BONGAIGAON REFINERY**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

P.O. DHALIGAON, BONGAIGAON, CHIRANG, ASSAM, INDIA

in the field of

TESTING

Certificate Number: TC-6027

Issue Date: 29/04/2024

Valid Until: 28/04/2026

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: Indian Oil Corporation Limited

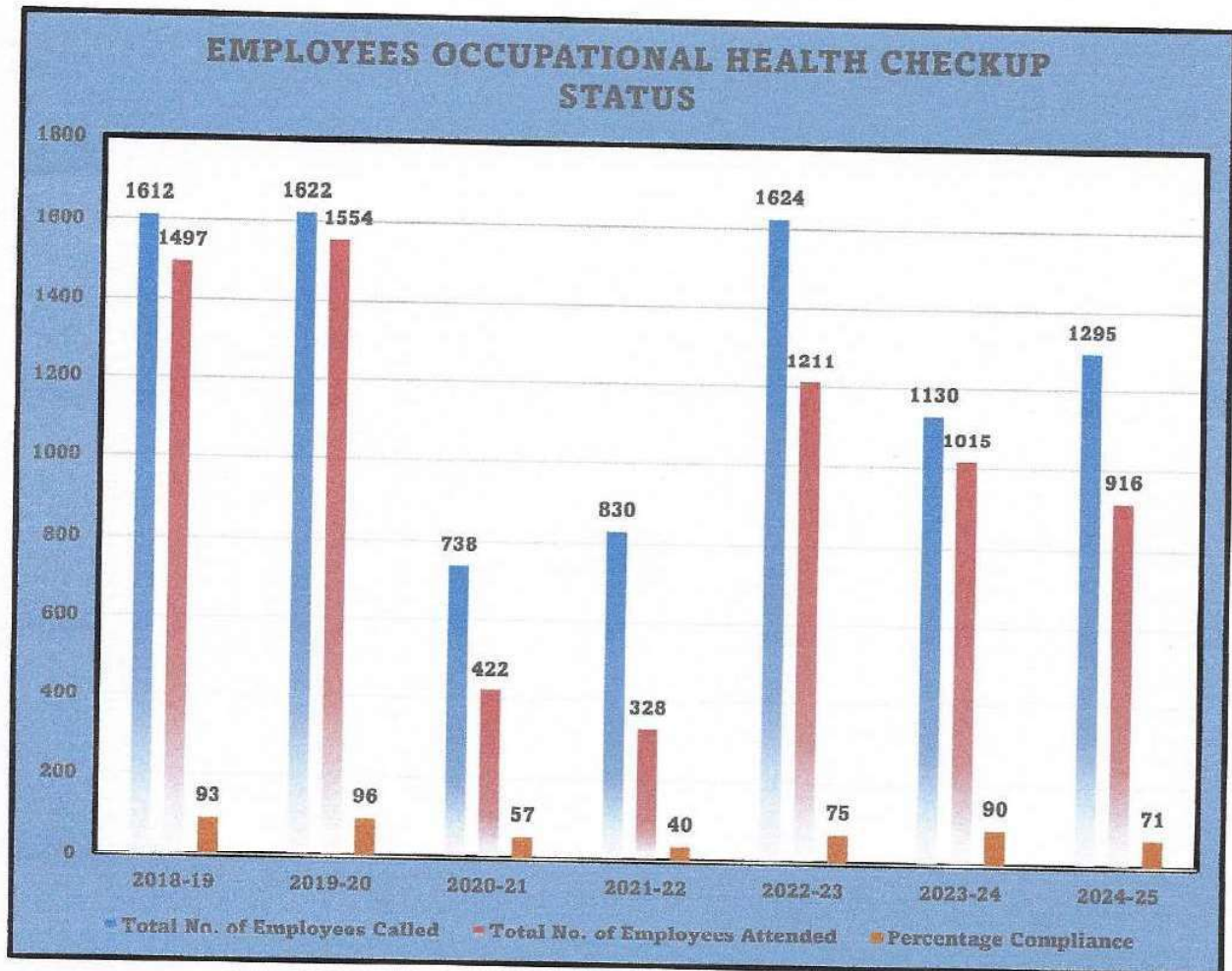
Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer

G. CMCHSE

13.0 APPENDIX-A11: Employees Occupational Health Checkup Status



Note: Employees Occupational Health checkup program was affected during the year 2020-2022 owing to COVID-19 pandemic situation.

G. CMCHSE

The screenshot displays a Honeywell DCS interface for a Flare System. The main window shows a process flow diagram (PFD) titled "FLARE SYSTEM FOR PETROCHEMICAL UNITS". The diagram includes a flare stack (X-002) with a molecular drum (X-004) and a water seal drum (V-003). It also features two blowdown pumps (59-P-002A and 59-P-001A) and a flame front generator (59-X-000). Various flow streams are labeled, including "FROM PAREX", "FROM XYLENE PLANT", "TO CBD PUMP DISCHARGE", "TO SLOPE TANK", "MP STEAM", "SERVICE WATER", "FUEL GAS", and "PA". The interface includes a top menu bar with "Station", "Edit", "View", "Control", "Action", "Configure", "Help", "Diag", "F5: CBL", and "Main Window". A bottom status bar shows "Honeywell", "28-Oct-16", "15:43:50", "Alarm", "crumsqsrwb", "CStn01-1", and "Oper".

G. CM(HSE)