भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड
भारत सरकार का उपक्रम
कोच्चि रिफ़ाइनरी

BHARAT PETROLEUM CORPORATION LIMITED
A Govt. of India Enterprise
Kochi Refinery

KR.HSE.ENV.05. HSSE.HECCR/01/2023/ EC No. J-11011/78/96-IA-II
25.06.2023

To
The Additional Principal Chief conservator of Forests (C)
Ministry of Environment, Forest & Climate Change
4th Floor, E&F Wings, Kendriya sadan, Koramangala
Bangalore-560 034

Dear Sir,

Sub: Submission of Half yearly compliance report on Environmental Clearance issued by the Ministry of Environment, Forests and Climate Change (MoEF & CC)

Ref: EC No. J-11011/78/96-IA-II dated. 05.03.1997 issued for the Project **"Installation of Diesel Hydro De-Sulphurisation (DHDS)** project M/s Bharat Petroleum Corporation Ltd - Kochi Refinery (Formerly Cochin Refineries Ltd)".

Please find enclosed the compliance reports on the various conditions laid down by MoEF &CC, pertaining to the half year period from **1st October 2022 to 31st March 2023** for the said project.

Thanking you,

Very truly yours
For BPCL Kochi Refinery

Ramachandran. M.K
General Manager in Charge (HSE)

Encl: 1. Six Monthly Compliance Report
2. Ground water analysis report _ Annexure - 1

Cc:

1. The Member Secretary
Central Pollution Control Board
Parivesh Bhawan
East Arjun Nagar
Delhi - 110 032

2. The Member Secretary
Kerala State Pollution Control Board
Plamoodu Junction
Pattom Palace
Thiruvananthapuram - 695 004

Compliance Status of Environmental Clearance conditions for installation of Diesel Hydro Desulphurisation (DHDS) project accorded by J-11011/78/96-IA-II dated 05.03.1997

Status of the project: Project commissioned in 2000

ITEM NO.	ITEM DESCRIPTION	Status as on 31.03.2023
1	All conditions stipulated by MoEF & CC while according to approval for Capacity Expansion Project	Complied
2	No expansion or modernization of the Plant should be carried out without approval of the MoEF & CC	Complied.
3	The project authority must strictly adhere to the stipulations laid down by the Kerala State Pollution Control Board and the State Govt.	Complied
4	The total SO_2 emission from BPCL Kochi Refinery including DHDS Project should not exceed the norm of 1607 Kg./hr. (Refer MoEF& CC vide letter No.J-110/1/78/96.IA.II dated 9th February,1999)	Complied. It has been reduced to 1579 kg/hr. as per latest EC for MS block project.
5	The existing ETP should be adequately augmented, or additional treatment facilities should be provided to accommodate the additional effluent load from DHDS project before commissioning the project to ensure that the treated effluent meets the MINAS standard.	New ETP has been commissioned along with the DHDS Project and New ETP with higher capacity also erected as part of IREP (Integrated Refinery Expansion Project).
6	Time bound action plan for disposal of oil sludge / recovery of oil and design details of the solid waste disposal pit should be furnished to the Ministry within a period of 3 months.	Complied. A scheme for the recovery of oil from accumulated sludge has been implemented. All the accumulated sludge at that point of time was processed and currently there is no accumulated stock of oily sludge. Sludge is being processed in Delayed Coker Unit, which has been commissioned as part of IREP project.

		A secured landfill facility for storing hazardous wastes was commissioned in March, 2005 and also we have rate contract with KEIL (Kerala Enviro Infrastructure limited), a PCB approved installation for the Hazardous waste disposal in Kerala.
7	SRU having an efficiency of more than 99% should be installed.	Complied. Additional Sulphur Recovery units with newer technology and higher efficiency of 99.9% have been commissioned as part of later projects viz. CEMP - II and IREP.
8	The ground water quality should be monitored, and the report should be submitted to the Ministry every six months.	Complied. Ground water quality report attached as **Annexure I**.

QUALITY CONTROL DEPARTMENT
BPCL-KOCHI REFINERY, AMBALAMUGAL

BOREWELL WATER TEST REPORT

Bore well :25
Date of Sample: 4.11.2022
Date of Testing: 15.11.2022

KR.TECH.QC.26.DRINK.WATR

Sl No:	Test Parameters	Unit	Method	Result	Acceptable limit
5	pH	-	IS 3025 (P:11)	7.4	6.5 – 8.5
15	Oil	mg/L	IS 3025 (P:39)	nil	nil
	Metals				
16	Silver (as Ag)	mg/L	IS13428 Annexe J	BDL (MDL=0.005)	0.1 (Max)
17	Aluminium (as Al)	mg/L	IS 3025 (P:55)	BDL(MDL=0.002)	0.03 (Max)
18	Boron (as B)	mg/L	IS 3025 (P:57)	BDL(MDL=0.01)	0.5 (Max)
19	Barium (as Ba)	mg/L	IS13428 Annexe F	BDL(MDL=0.01)	0.7 (Max)
20	Calcium (as Ca)	mg/L	IS 3025 (P:40)	9	75 (Max)
21	Cadmium (as Cd)	mg/L	IS 3025 (P:41)	BDL(MDL=0.001)	0.003 (Max)
22	Chromium (as Cr)	mg/L	IS 3025 (P:52)	BDL(MDL=0.01)	0.05 (Max)
23	Copper (as Cu)	mg/L	IS 3025 (P:42)	BDL(MDL=0.01)	0.05 (Max)
24	Iron (as Fe)	mg/L	IS 3025 (P:53)	0.06	0.3 (Max)
25	Magnesium (as Mg)	mg/L	IS 3025 (P:46)	3.8	30 (Max)
26	Manganese (as Mn)	mg/L	IS 3025 (P:59)	BDL(MDL=0.01)	0.1 (Max)
27	Nickel (as Ni)	mg/L	IS 3025 (P:54)	BDL(MDL=0.01)	0.02 (Max)
28	Molybdenum (as Mo)	mg/L	IS 3025 (P:02)	BDL(MDL=0.002	0.07 (Max)
29	Lead (as Pb)	mg/L	IS 3025 (P:47)	BDL(MDL=0.01)	0.01 (Max)
30	Zinc (as Zn)	mg/L	IS 3025 (P:49)	0.05	5 (Max)
31	Arsenic (as As)	mg/L	IS 3025 (P:37)	BDL(MDL0.005)	0.01 (Max)
32	Mercury (as Hg)	mg/L	IS 3025 (P:48)	BDL(MDL0.0001)	0.001(Max)
33	Selenium (as Se)	mg/L	IS 3025 (P:56)	BDL(MDL=0.001)	0.1 (Max)
34	Antimony (as Sb)	mg/L	APHA:3113B	BDL(MDL=0.001)	Max0.1

BDL: Below Detection Limit
MDL: Minimum Detection Limit

S.Mahamed Iqbal
Manager (Quality Control)

QUALITY CONTROL DEPARTMENT
BPCL-KOCHI REFINERY, AMBALAMUGAL

BOREWELL WATER TEST REPORT

Bore well Water-11
Date of Sample: 30.12.2022
Date of Testing: 2.1.2023

KR.TECH.QC.26.DRINK.WATR

Sl No:	Test Parameters	Unit	Method	Result	Acceptable limit
1	pH	-	IS 3025 (P:11)	7.2	6.5 – 8.5
2	Oil	mg/L	IS 3025 (P:39)	nil	nil
	Metals				
3	Silver (as Ag)	mg/L	IS13428 Annexe J	BDL (MDL=0.005)	0.1 (Max)
4	Aluminium (as Al)	mg/L	IS 3025 (P:55)	BDL(MDL=0.002)	0.03 (Max)
5	Boron (as B)	mg/L	IS 3025 (P:57)	BDL(MDL=0.01)	0.5 (Max)
6	Barium (as Ba)	mg/L	IS13428 Annexe F	BDL(MDL=0.01)	0.7 (Max)
7	Calcium (as Ca)	mg/L	IS 3025 (P:40)	18	75 (Max)
8	Cadmium (as Cd)	mg/L	IS 3025 (P:41)	BDL(MDL=0.001)	0.003 (Max)
9	Chromium (as Cr)	mg/L	IS 3025 (P:52)	BDL(MDL=0.01)	0.05 (Max)
10	Copper (as Cu)	mg/L	IS 3025 (P:42)	BDL(MDL=0.01)	0.05 (Max)
11	Iron (as Fe)	mg/L	IS 3025 (P:53)	0.06	0.3 (Max)
12	Magnesium (as Mg)	mg/L	IS 3025 (P:46)	4	30 (Max)
26	Manganese (as Mn)	mg/L	IS 3025 (P:59)	BDL(MDL=0.01)	0.1 (Max)
13	Nickel (as Ni)	mg/L	IS 3025 (P:54)	BDL(MDL=0.01)	0.02 (Max)
14	Molybdenum (as Mo)	mg/L	IS 3025 (P:02)	BDL(MDL=0.002	0.07 (Max)
15	Lead (as Pb)	mg/L	IS 3025 (P:47)	BDL(MDL=0.01)	0.01 (Max)
16	Zinc (as Zn)	mg/L	IS 3025 (P:49)	0.04	5 (Max)
17	Arsenic (as As)	mg/L	IS 3025 (P:37)	BDL(MDL0.005)	0.01 (Max)
18	Mercury (as Hg)	mg/L	IS 3025 (P:48)	BDL(MDL0.0001)	0.001(Max)
19	Selenium (as Se)	mg/L	IS 3025 (P:56)	BDL(MDL=0.001)	0.1 (Max)
20	Antimony (as Sb)	mg/L	APHA:3113B	BDL(MDL=0.001)	Max0.1

BDL: Below Detection Limit
MDL: Minimum Detection Limit

S.Mahamed Iqbal
Sr.Manager (Quality Control)

QUALITY CONTROL DEPARTMENT
BPCL-KOCHI REFINERY, AMBALAMUGAL

BOREWELL WATER TEST REPORT

Bore well Water-39
Date of Sample: 20.1.2023
Date of Testing: 25.1.2023

KR.TECH.QC.26.DRINK.WATR

Sl No:	Test Parameters	Unit	Method	Result	Acceptable limit
1	pH	-	IS 3025 (P:11)	7.4	6.5 – 8.5
2	Oil	mg/L	IS 3025 (P:39)	nil	nil
	Metals				
3	Silver (as Ag)	mg/L	IS13428 Annexe J	BDL (MDL=0.005)	0.1 (Max)
4	Aluminium (as Al)	mg/L	IS 3025 (P:55)	BDL(MDL=0.002)	0.03 (Max)
5	Boron (as B)	mg/L	IS 3025 (P:57)	BDL(MDL=0.01)	0.5 (Max)
6	Barium (as Ba)	mg/L	IS13428 Annexe F	BDL(MDL=0.01)	0.7 (Max)
7	Calcium (as Ca)	mg/L	IS 3025 (P:40)	20	75 (Max)
8	Cadmium (as Cd)	mg/L	IS 3025 (P:41)	BDL(MDL=0.001)	0.003 (Max)
9	Chromium (as Cr)	mg/L	IS 3025 (P:52)	BDL(MDL=0.01)	0.05 (Max)
10	Copper (as Cu)	mg/L	IS 3025 (P:42)	BDL(MDL=0.01)	0.05 (Max)
11	Iron (as Fe)	mg/L	IS 3025 (P:53)	0.07	0.3 (Max)
12	Magnesium (as Mg)	mg/L	IS 3025 (P:46)	3.8	30 (Max)
26	Manganese (as Mn)	mg/L	IS 3025 (P:59)	BDL(MDL=0.01)	0.1 (Max)
13	Nickel (as Ni)	mg/L	IS 3025 (P:54)	BDL(MDL=0.01)	0.02 (Max)
14	Molybdenum (as Mo)	mg/L	IS 3025 (P:02)	BDL(MDL=0.002	0.07 (Max)
15	Lead (as Pb)	mg/L	IS 3025 (P:47)	BDL(MDL=0.01)	0.01 (Max)
16	Zinc (as Zn)	mg/L	IS 3025 (P:49)	0.03	5 (Max)
17	Arsenic (as As)	mg/L	IS 3025 (P:37)	BDL(MDL0.005)	0.01 (Max)
18	Mercury (as Hg)	mg/L	IS 3025 (P:48)	BDL(MDL0.0001)	0.001(Max)
19	Selenium (as Se)	mg/L	IS 3025 (P:56)	BDL(MDL=0.001)	0.1 (Max)
20	Antimony (as Sb)	mg/L	APHA:3113B	BDL(MDL=0.001)	Max0.1

BDL: Below Detection Limit
MDL: Minimum Detection Limit

S.Mahamed Iqbal
Sr.Manager (Quality Control)

QUALITY CONTROL DEPARTMENT
BPCL-KOCHI REFINERY, AMBALAMUGAL

BOREWELL WATER TEST REPORT

Bore well Water-49
Date of Sample: 16.2.2023
Date of Testing: 20.2.2023

KR.TECH.QC.26.DRINK.WATR

Sl No:	Test Parameters	Unit	Method	Result	Acceptable lim
1	pH	-	IS 3025 (P:11)	7.8	6.5 – 8.5
2	Oil	mg/L	IS 3025 (P:39)	nil	nil
	Metals				
3	Silver (as Ag)	mg/L	IS13428 Annexe J	BDL (MDL=0.005)	0.1 (Max)
4	Aluminium (as Al)	mg/L	IS 3025 (P:55)	BDL(MDL=0.002)	0.03 (Max)
5	Boron (as B)	mg/L	IS 3025 (P:57)	BDL(MDL=0.01)	0.5 (Max)
6	Barium (as Ba)	mg/L	IS13428 Annexe F	BDL(MDL=0.01)	0.7 (Max)
7	Calcium (as Ca)	mg/L	IS 3025 (P:40)	26	75 (Max)
8	Cadmium (as Cd)	mg/L	IS 3025 (P:41)	BDL(MDL=0.001)	0.003 (Max)
9	Chromium (as Cr)	mg/L	IS 3025 (P:52)	BDL(MDL=0.01)	0.05 (Max)
10	Copper (as Cu)	mg/L	IS 3025 (P:42)	BDL(MDL=0.01)	0.05 (Max)
11	Iron (as Fe)	mg/L	IS 3025 (P:53)	0.07	0.3 (Max)
12	Magnesium (as Mg)	mg/L	IS 3025 (P:46)	3.5	30 (Max)
26	Manganese (as Mn)	mg/L	IS 3025 (P:59)	BDL(MDL=0.01)	0.1 (Max)
13	Nickel (as Ni)	mg/L	IS 3025 (P:54)	BDL(MDL=0.01)	0.02 (Max)
14	Molybdenum (as Mo)	mg/L	IS 3025 (P:02)	BDL(MDL=0.002	0.07 (Max)
15	Lead (as Pb)	mg/L	IS 3025 (P:47)	BDL(MDL=0.01)	0.01 (Max)
16	Zinc (as Zn)	mg/L	IS 3025 (P:49)	0.03	5 (Max)
17	Arsenic (as As)	mg/L	IS 3025 (P:37)	BDL(MDL0.005)	0.01 (Max)
18	Mercury (as Hg)	mg/L	IS 3025 (P:48)	BDL(MDL0.0001)	0.001(Max)
19	Selenium (as Se)	mg/L	IS 3025 (P:56)	BDL(MDL=0.001)	0.1 (Max)
20	Antimony (as Sb)	mg/L	APHA:3113B	BDL(MDL=0.001)	Max0.1

BDL: Below Detection Limit
MDL: Minimum Detection Limit

S.Mahamed Iqbal
Sr.Manager (Quality Control)

QUALITY CONTROL DEPARTMENT
BPCL-KOCHI REFINERY, AMBALAMUGAL

BOREWELL WATER TEST REPORT

Bore well Water-49
Date of Sample: 17.3.2023
Date of Testing: 25.3.2023

KR.TECH.QC.26.DRINK.WATR

Sl No:	Test Parameters	Unit	Method	Result	Acceptable limi
1	pH	-	IS 3025 (P:11)	7.5	6.5 – 8.5
2	Oil	mg/L	IS 3025 (P:39)	nil	nil
	Metals				
3	Silver (as Ag)	mg/L	IS13428 Annexe J	BDL (MDL=0.005)	0.1 (Max)
4	Aluminium (as Al)	mg/L	IS 3025 (P:55)	BDL(MDL=0.002)	0.03 (Max)
5	Boron (as B)	mg/L	IS 3025 (P:57)	BDL(MDL=0.01)	0.5 (Max)
6	Barium (as Ba)	mg/L	IS13428 Annexe F	BDL(MDL=0.01)	0.7 (Max)
7	Calcium (as Ca)	mg/L	IS 3025 (P:40)	29	75 (Max)
8	Cadmium (as Cd)	mg/L	IS 3025 (P:41)	BDL(MDL=0.001)	0.003 (Max)
9	Chromium (as Cr)	mg/L	IS 3025 (P:52)	BDL(MDL=0.01)	0.05 (Max)
10	Copper (as Cu)	mg/L	IS 3025 (P:42)	BDL(MDL=0.01)	0.05 (Max)
11	Iron (as Fe)	mg/L	IS 3025 (P:53)	0.09	0.3 (Max)
12	Magnesium (as Mg)	mg/L	IS 3025 (P:46)	4.8	30 (Max)
26	Manganese (as Mn)	mg/L	IS 3025 (P:59)	BDL(MDL=0.01)	0.1 (Max)
13	Nickel (as Ni)	mg/L	IS 3025 (P:54)	BDL(MDL=0.01)	0.02 (Max)
14	Molybdenum (as Mo)	mg/L	IS 3025 (P:02)	BDL(MDL=0.002	0.07 (Max)
15	Lead (as Pb)	mg/L	IS 3025 (P:47)	BDL(MDL=0.01)	0.01 (Max)
16	Zinc (as Zn)	mg/L	IS 3025 (P:49)	0.06	5 (Max)
17	Arsenic (as As)	mg/L	IS 3025 (P:37)	BDL(MDL0.005)	0.01 (Max)
18	Mercury (as Hg)	mg/L	IS 3025 (P:48)	BDL(MDL0.0001)	0.001(Max)
19	Selenium (as Se)	mg/L	IS 3025 (P:56)	BDL(MDL=0.001)	0.1 (Max)
20	Antimony (as Sb)	mg/L	APHA:3113B	BDL(MDL=0.001)	Max0.1

BDL: Below Detection Limit
MDL: Minimum Detection Limit

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