



Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

FORM V

Environmental Audit Report for the financial Year ending the 31st March 2018

Company Information

Company Name

Bharat Petroleum Corporation Limited

Application UAN number

NA

Address

Bharat Petroleum Corporation Ltd., Mumbai Refinery.

Plot no

234/482

Taluka

Kurla

Village

Mahul

Capital Investment (In lakhs)

1020470

Scale

L.S.I

City

Mumbai

Pincode

400074

Person Name

Mr. S R KULKARNI

Designation

DGM (Energy & Environment)

Telephone Number

02225533173

Fax Number

NA

Email

kulkarnisr@bharatpetroleum.in

Region

SRO-Mumbai III

Industry Category

Red

Industry Type

R56 Oil Refinery (mineral Oil or Petro Refineries)

Last Environmental statement submitted online

yes

Consent Number

BO/CAC-Cell/UAN No
00000021287/1st CAC/1706000718

Consent Issue Date

16/06/2017

Consent Valid Upto

31/08/2021

Product Information

Product Name

Liquified Petroleum Gas, C3

Consent Quantity

643860

Actual Quantity

539408

UOM

MT/A

Benzene, Toulene

127750

57852

MT/A

SBP, Hexane, Motor spirit, MTBE, Naphtha

3018185

3223935

MT/A

SKO, Mineral Turpentine Oil, Aviation Turbine Fuel

1904205

1305696

MT/A

High Speed Diesel, Light Diesel oil

5738895

6649801

MT/A

Furnace oil, Low sulfur Heavy stock, Bitumen, Sulfur

2241100

1599202

MT/A

Lube product

248200

262282

MT/A

By-product Information

By Product Name

NA

Consent Quantity

NA

Actual Quantity

NA

UOM

MT/A

1) Water Consumption in m3/day

Water Consumption for Process**Consent Quantity in m3/day**

20405

Actual Quantity in m3/day

12283

Cooling

153790

78263

Domestic	1408	1009
All others	NA	NA
Total	175603	91555

1) Effluent Generation in CMD / MLD

Particulars	Consent Quantity	Actual Quantity	UOM
Effluent from Plants	5760	1869	CMD
Sea water blowdown	146319	74350	CMD

2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

Name of Products (Production)	During the Previous financial Year	During the current Financial year	UOM
NA	NA	NA	Ton/Ton

3) Raw Material Consumption (Consumption of raw material per unit of product)

Name of Raw Materials	During the Previous financial Year	During the current Financial year	UOM
Crude Throughput	13602497	14289114	MT/A

4) Fuel Consumption

Fuel Name	Consent quantity	Actual Quantity	UOM
Gas	338501	157822	MT/A
LSHS	232542	190576	MT/A
coke	109500	85600	MT/A
RLNG	335727	224687	MT/A
BHAG	21900	8639	MT/A
Naphtha	9271	0	MT/A
PSA off gas	94900	121546	MT/A

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

[A] Water

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged (Mg/Lit) Except PH,Temp,Colour	Percentage of variation from prescribed standards with reasons	Standard	Reason
	Quantity	Concentration	%variation		
PH	2026 KL/day Total Effluent	7.41	0	6 to 8.5	NA
Oil & Grease	2026 KL/day Total Effluent	2.14	0	5	NA
BOD (3 days 27°C)	2026 KL/day Total Effluent	12.21	0	15	NA
COD	2026 KL/day Total Effluent	70.82	0	125	NA
Suspended Solids	2026 KL/day Total Effluent	14.42	0	20	NA
Phenols	2026 KL/day Total Effluent	<0.001	0	0.35	NA
Sulphides	2026 KL/day Total Effluent	<0.1	0	0.5	NA
CN	2026 KL/day Total Effluent	<0.01	0	0.2	NA
Ammonia as N	2026 KL/day Total Effluent	10.81	0	15	NA
TKN	2026 KL/day Total Effluent	13.50	0	40	NA

Phosphate	2026 KL/day Total Effluent	<1	0	3	NA
Cr (Hexavalent)	2026 KL/day Total Effluent	<0.1	0	0.1	NA
Cr (Total)	2026 KL/day Total Effluent	<0.01	0	2	NA
Pb	2026 KL/day Total Effluent	<0.01	0	0.1	NA
Hg	2026 KL/day Total Effluent	<0.001	0	0.01	NA
Zn	2026 KL/day Total Effluent	0.01	0	5	NA
Ni	2026 KL/day Total Effluent	0.01	0	1	NA
Cu	2026KL/day Total Effluent	<0.01	0	1	NA
V	2026 KL/day Total Effluent	<0.2	0	0.2	NA
Benzene	2026 KL/day Total Effluent	<0.01	0	0.1	NA
Benzo (a)-Pyrene	2026 KL/day Total Effluent	<0.01	0	0.2	NA

[B] Air (Stack)

Pollutants Detail	Quantity of Pollutants discharged (KL/day)	Concentration of Pollutants discharged(Mg/NM3)	Percentage of variation from prescribed standards with reasons	Standard	Reason
	Quantity	Concentration	%variation		
SO2	4402.6 kg/day	105	0	1700	NA
NOx	8286.2 kg/day	197.6	0	450	NA
CO	2165 kg/day	51.6	0	200	NA
Ni & V	71.8 kg/day	1.71	0	5	NA
PM	363.6 Kg/day	8.67	0	100	NA

HAZARDOUS WASTES

1) From Process

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
4.2 Spent catalyst	691.93	1315.2	MT/A

2) From Pollution Control Facilities

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
4.2 Spent catalyst	NA	NA	MT/A

SOLID WASTES

1) From Process

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
NA	NA	NA	MT/A

2) From Pollution Control Facilities

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
Oily sludge	0	1200	M3/Anum

3) Quantity Recycled or Re-utilized within the unit

Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
4.1 Oily sludge/emulsio	5745.2	4453.83	MT/A

Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

1) Hazardous Waste

Type of Hazardous Waste Generated

4.2 Spent catalyst	Qty of Hazardous Waste 1315	UOM MT/A	Concentration of Hazardous Waste The composition details of hazardous waste is given in form 4 submitted online on 14-06-2018
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2) Solid Waste

Type of Solid Waste Generated

Type of Solid Waste Generated	Qty of Solid Waste	UOM	Concentration of Solid Waste
Ferrous Scrap	6168	MT/A	NA
Wood Scrap	479	MT/A	NA
Drums & Tins	2112	Nos./Y	NA
Non Ferrous Scrap	522.8	MT/A	NA

Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.

Description	Reduction in Water Consumption (M3/day)	Reduction in Fuel & Solvent Consumption (KL/day)	Reduction in Raw Material (Kg)	Reduction in Power Consumption (KWH)	Capital Investment(in Lacs)	Reduction in Maintenance(in Lacs)
Replaced 5315 nos. of conventional light fittings with energy efficient LED lighting	NA	NA	NA	115.5	61	NA
Solar power plant	NA	NA	NA	614	313	NA
Replacement of third stage ejector system by LRVP (Liquid ring vacuum pump) in VDU3	NA	STEAM CONSUMPTION REDUCED: 60 MT/D	NA	NA	2500	NA
Heat Recovery from diesel stream in HCU	NA	STEAM CONSUMPTION REDUCED: 125 MT/D	NA	NA	88	NA
AFC fan blades were replaced with energy efficient new generation (EFRP) FRP blades in ARU complex	NA	NA	NA	40	30	NA
Replacement of AFC fan blades was carried out with EFRP blades for CCR splitter overhead Exchanger	NA	NA	NA	30	25	NA
Hydro-COM step less capacity control system, DHDS MUG compressor	NA	NA	NA	112	133	NA
Diesel Hydro-treater (DHT) unit was commissioned	NA	NA	NA	30	236800	NA

Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.

[A] Investment made during the period of Environmental Statement

Detail of measures for Environmental Protection

Mechanical means & chemical ways for recovery of oil.

Environmental Protection Measures

Oil recovery from weathering pit and crude tank cleaning

Capital Investment (Lacks)

391.1

Bio-remediation availing M/s. OTBL (ONGC Teri Biotech Limited) technology with the bacteria developed by them.	Bio remediation for disposal of sludge	17.25
Monitoring of stacks, Noise levels, Fugitive emissions, effluent quality, Ambient Air by Approved Laboratory	Routine Environmental monitoring	20.45
Disposal of Hazardous waste	Hazardous waste management rule,2016	71.83
Revamp of oil catcher	For environment protection and recovery of oil	320
Commissioning of TGTU	Improving sulfur recovery of SRU unit	11200

[B] Investment Proposed for next Year

Detail of measures for Environmental Protection

<i>Detail of measures for Environmental Protection</i>	<i>Environmental Protection Measures</i>	<i>Capital Investment (Lacks)</i>
Energy efficient LED lighting	Energy conservation	677.3
Solar PV Power System	Power conservation of 348 KWP	234
Replacement of steam trap at CDU-4/ ARU/ offsite & utilities	Energy conservation/ steam conservation	700
Provision of electrical tracing on FO supply line to CDU 3, HCU, LOBS, CDU 4, RFU & ARU	steam conservation	450
Provision of Instrument air for LPG facilities from N2 plant/ Boiler house Instrument air system	Power conservation of 132 KWP	75

Any other particulars in respect of environmental protection and abatement of pollution.

Particulars

DHT unit was commissioned at Mumbai Refinery to produce 100% BS IV HSD to meet the Government Mandate of 100% BS IV HSD in the entire country from 1st April 2017. Also, Project work for Gasoline Treatment Unit (GTU) is in progress to produce 100% BS VI MS. Tail Gas Treatment Unit was commissioned in Nov-2018 for reducing the sulphur emissions further in SRU units in Refinery. Flare gas recovery system in operation for reducing flare load. Demountable flare of 125 metres height commissioned. So

Name & Designation

Mr. S R KULKARNI, DGM, Energy & Environment Department . Bharat Petroleum Corp Ltd, Mumbai Refinery. Mahul, Mumbai-400074