भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड
भारत सरकार का उपक्रम
आईएसओ 9001:2008, आईएसओ 14001:2004, ओएचएसएएस 18001:2007
एवं आईएसओ 50001:2011 प्रमाणित रिफाइनरी

BHARAT PETROLEUM CORPORATION LTD.
A Govt. of India Enterprise
AN ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007
AND ISO 50001:2011 CERTIFIED REFINERY

16th May-2019

To,
Ministry of Environment, Forest and climate change
West Central Regional Office,
Ground Floor, Eastern Wing,
New Secretariat Building-Opposite Old VCA Stadium,
Civil Lines -Nagpur-440001.

Kind attn : Shri Kawaljeet Singh APCCF

Subject: Six monthly compliance reports for projects at BPCL, Mumbai Refinery.

1. J-11011/98/2016-1A II (I) dated 20th March 2017
2. J-11011/582/2011-1A II (I) dated 7th June 2013 & F. No. J-11011/180/2008-IA II(I), dated 28/4/2008
3. J-11011/21/2013-1A II (I) dated 13thAug-2015
4. J-11011/140/2012-1A II (I) dated 12th June 2013
5. J-11011/270/2013-1A II (I) dated 8th Aug 2014

Dear Sir,

This is reference to the Environment clearance granted for CCR, CDU-4, ISOMERIZATION, DHDT and GTU project at BPCL Mumbai Refinery.

Please find attached herewith compliance report as on 1st April-2019 for above mentioned projects along with relevant annexures.

We would like to inform you that at present, BPCL Mumbai Refinery has received consent to establish for Gasoline Hydro-treatment Unit (GTU) on 18thOct-2017 (i.e.Formate1.0/ BO/ CAC/-Cell/ UAN000025363/ 7th CAC/ 1710000736). Consent to operate has been applied for this project on 22nd April-2019 and this project is expected to be completed by 31st Oct-2019.

Trust this meets the requirement.

Thanking you,

Yours faithfully,
FOR BHARAT PETROLEUM CORPORATION LTD

Nilesh Kandalkar
D. G. M. (Energy & Environment)

cc: 1. Central Pollution Control Board, Vadodara
2. MPCB, RO Mumbai

Compliance Status Report for Gasoline Hydro Treatment Unit (GTU) (0.9 MMTPA) & associated facilities to produce 100% BS-VI MS

EC Letter no. J-11011/98/2016-1A II (I) dated 20th March 2017

As per the stipulations given in the Environmental Clearance for Gasoline Hydro Treatment Unit (GTU) (0.9 MMTPA) & its associated facilities to produce 100% BS-VI MS, the detailed compliance status is given below:

A. SPECIFIC CONDITIONS :

Sr. No.	SPECIFIC CONDITION	STATUS as on 31.03.2019
i.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules,1986 vide G.S.R. 186(E) dated 18th March,2008	Being complied with.
ii.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J J-11011/582/2011-IA II (I) dated 7th June'2013, letter no. J-11011/140/2012-IA II (I) dated 12th June 2013, letter no.-J-11011/270/2013-IA II (I) dated 8th August 2014 and letter no. J-11011/21/2013-IA II (I) dated 13th August 2015, shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office.	Compiled. Compliance reports are regularly sent to MoEF & CC Western Regional Office at Nagpur.
iii.	Continuous on-line stack monitoring for SO2, NOx and CO of all the stacks shall be carried out. Low NOx burners shall be installed.	All stacks have been provided with analyzers for continuous online monitoring of Sox, NOX, CO & SPM. Similarly, analyzers will be installed at GTU stacks for continuous on-line monitoring of SO2, NOx, CO and SPM. Low NOx burners are being procured for the same.
iv.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Noted. Power will be supplied to GTU unit from Captive Power Plant existing at the refinery or shall be imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipment's in the refinery only in case of total power failure.
v.	Fresh water requirement from MCGM shall not exceed 15950 m3/day. After expansion and prior permission shall be obtained from competent authority. About 300 m^3/hr of cooling water blow down will be discharged to sea.	Complied. Please refer **Annexure-1** for Water Balance.
vi.	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MoEF & CC. Outcome from the report to be implemented for conservation scheme.	Noted. Comprehensive water audit was carried out at BPCL Mumbai Refinery.

		Outcomes from this report are being studies for implementation.
vii	Automatic/online monitoring system (24 X 7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB, Regional Office of MoEF&CC and in the Company's website.	Complied. On line analyzers have been provided at Effluent Treatment Plant outlet for measuring PH, BOD, COD & TSS with continuous connectivity to CPCB/ MPCB servers. The project of transmission of ETP outlet flow reading to CPCB/ MPCB server is in progress with the help of CPCB approved vendor M/s Yokogawa India Ltd.
viii	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time.	Complied. Hazardous Waste is disposed off as and when generated as per Hazardous waste rules and as per Consent to Operate issued by MPCB to MPCB approved Recycler party M/s MWML (Mumbai Waste Management Ltd.). (Refer **Annexure-2**: Membership Certificate of M/s MWML). Hazardous Waste annual return form (Form-IV) is filled up every year before 30th June of every year for previous financial year. For 2017-18, Form- IV was filled on 14th June-2018.
ix.	Acoustic enclosure/silencer shall be installed wherever it is possible.	Noted
x.	Occupational Health Surveillance of the workers should be done on regular basis and records maintained as per the Factories Act.	Complied. Periodic Health check up for employees is carried out regularly.
xi.	Green belt over 33% area should be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of project area, in downward direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	Noted. GTU unit is within the premises of existing Mumbai refinery. Tree plantation is being carried out in and around Chembur / Mumbai to mitigate the effect of emissions. - In the year 2014-15, 10000 tree saplings were planted at various locations around Mumbai (Among these saplings, 3000 were planted at AMPC Vashi to develop four acres of green belt in the heart of Navi Mumbai. Refer **Annexure- 3:** Certificate from APMC Vashi). - In 2016-17, more than 3000 trees were planted at MIDC area at Taloja. **(Refer Annexure- 4:** Certificate from M/s Mumbai Waste Management Limited (MWML). - In 2017-18, 5000 Trees were planted at Thane Municipal Corporation in the year 2017. (Refer

		Annexure- 5: Certificate from Certificate from TMC, Thane). – In 2018-19, more than 1350 saplings were planted at Marine Oil Terminal area, MBPT area, inside BPCL refinery and National Park Borivali.
xii.	The company should make the arrangement for protection of possible fire and explosion hazards during construction and operation phase. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Noted. Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xiii.	All the recommendations motioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	Noted. As per risk assessment report, blast proof control room has been built up at GTU site. Hydrocarbon & H2S meters will be installed at critical locations.
xiv.	At least 2% of the total cost of the project shall be earmarked towards the Enterprises Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry Of Regional Office. Implementation of such program shall be ensured accordingly in a time bound manner.	Complied. Please refer **Annexure-6** for Enterprises Social Commitment (ESC) expenditure details.
xv.	Zero liquid discharge to be ensured.	Noted. At BPCL Mumbai Refinery, Effluent water, after treatment in Effluent Treatment Plant (ETP), is recycled back in process cooling tower. There are analyzers fitted at ETP outlet for PH, BOD, COD and TSS with continuous data connectivity to CPCB/ MPCB server. Further for reducing fresh water make up in cooling towers, water treated in RCF STP unit is being received at BPCL MR cooling towers.

B.GENERAL CONDITIONS:

Sr. No.	Condition	Status as on 31.03.2019
i.	The project authorities must strictly adhere to the stipulations made by the Maharashtra Pollution Control Board (SPCB), 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 alterations in the project proposed 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.	Complied
iii.	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Three Ambient Air Quality Monitoring Stations are existing in the refinery for on-line monitoring of PM-10, PM-2.5, SO2, NOx, CO, Ammonia, Ozone and Meteorological parameters of Wind speed, Wind Direction, Temperature & Relative humidity as per National Ambient Air Quality Standards (NAAQS). Real time AMS data is being transmitted to CPCB/ MPCB site. Also, online data of parameters namely Benzene, Toluene, O/M/P- Xylene and Methane & Non Methane hydrocarbon from AMS has been successfully connected and transmitted to MPCB and CPCB servers since 31st Dec 2018.
iv.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No.826 (E) dated 16th November, 2009 shall be followed.	Ambient Air quality data is being collected at three locations in the existing refinery. The quality is conforming to the standard as specified in the NAAQS. Ambient air Quality report at BPCL is attached as **Annexure-7.**
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 should conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (night time).	Noted. Ambient Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring carried out in the periphery of the refinery is attached. (Refer **Annexure-7**: Noise Monitoring Data).
vi.	The company shall harvest rain water from roof tops of the buildings and storm water drains to recharge the ground water and use the same waste for the process activities to the project to conserve fresh water.	Complied. Rain water harvesting systems are provided at BPCL MR at 12 locations out of which RWH system at CCR & DHT SRR roof top were commissioned in June-2018. Details of total Rain water harvested are as below: 2016-17: 88 Thousand KL 2017-18: 65.7 Thousand KL 2018-19: 42.8 Thousand KL

vii.	Training shall be imparted to all employees on safety & health aspects of chemicals handling. Pre – employment & 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. Safety trainings are carried out for BPCL employees as well as contractor employees which includes Hands on fire fighting, Behavior based safety training & safety in refining etc. Mandatory periodic health check is done for employees and also pre-employment check is carried out at BPCL medical center. Comprehensive safety training is provided to contractor staff during registration process by Fire & Safety Dept.
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.	Being implemented.
ix.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	Being implemented. CSR activities are conducted on regular basis for local villages which involves Cancer screening camp, Eye screening camp Blood donation camp, Public health center, Ambulance service during emergency, providing fish nets to local fishermen.
x.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Complied. BPCL is providing scholarships to needy students through local schools. Also felicitates 10th & 12th std. students every year. E & E department carry out tree plantation and awareness functions in nearby schools as a part commitment towards sustainable environment.
xi.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	BPCL refinery already has an Environment section to carry out environmental management and monitoring functions. Refinery also has a full-fledged NABL approved Laboratory.
xii.	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.	Various Environmental projects incurring capital expenditure are being carried out regularly. List of recent Environment projects is attached as **Annexure-8**.

xiii.	A copy of clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad / Municipal Corporation, Urban local Body and the Local Body and the local NGO, if any from whom any suggestions / representations, if any, from whom suggestions / representations, if any, were received while processing the proposal.	Complied Environment Clearance letter has been put on the BPCL corporate website www.bharatpetroleum.in/Energizing Environment/Health Safety & Environment / Environment Clearance letter has been sent to Municipal corporation
xiv.	The project proponent shall also submit six monthly reports on 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 Regional office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environment Clearance and six monthly compliance status report shall be posted on the website of the company.	Complied. Six monthly compliance statement was sent to the regional office of MoEF, Nagpur, Zonal office of CPCB, and SRO/ RO office of MPCB in Oct-2018. The Environment Clearance and six monthly compliance report was also posted on the BPCL corporate website.
xv.	The Environmental Statement for each financial year ending 31st March in Form-V as is mandated to be submitted to the concerned State Pollution Control Board as prescribed under Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the web site of company along with compliance of Environmental Clearance conditions and shall also be sent to the respective Regional Office of MoEF&CC by e-mail.	Duly filled form V (Environment Statement) for every financial year is submitted to MPCB office before 30th Sept of every assessment year. For 2017-18 also, Form-V was submitted to MPCB on 19th Sept-2018. Please refer **Annexure- 9**.
xvi.	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 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 same shall be forwarded to the Regional Office of the Ministry.	Subsequent to obtaining Env. Clearance from MoEF for GTU, dt 20th March-17, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 7th of April 2017. **Annexure- 10 & 10a.**
xvii.	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 commencing the land development work.	The date of financial closure shall be informed to the appropriate authorities.

Compliance Status Report for Installation of Continuous Catalytic Regeneration Reformer (CCR 1.2 MMT) at BPCL Mumbai Refinery

Reference to Letter no. F. No. J-11011/180/2008-IA II(I), DATED 28/4/2008 and J-11011/582/2011-1A II (I) dated 7th June 2013.

The Ministry of Environment and Forests accorded environmental clearance for installation of new Continuous Catalytic Regeneration Reformer (CCR 1.2 MMTPA) within the premises of BPCL Mumbai Refinery. As per the stipulations given in the Environmental Clearance, the detailed compliance status is given below:

Status of the CCR Project

- CCR Unit commissioned on 04.03.2014 and on grade product diverted to storage on 08.03.2014. **Project completed.**

Sr. No.	SPECIFIC CONDITIONS	STATUS as on 31.03.2019
i.	Compliance to all the Environmental conditions stipulated in the environmental clearance letter no J-11011/180/2008-1A II (I) dated 28th April 2008 shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional office at Bhopal	Compliance reports sent to MoEF & CC western Regional office. Project has been commissioned on 4th March-2014.
ii.	M/s BPCL shall comply with new standards/norms for Oil refinery Industry notified under Environment (Protection) Rules 1986 vide GSR 186 (E) dated 18th March 2008	Please Refer GTU compliance report as on 31.03.2019.
iii.	Continuous on-line stack monitoring for SO2, NOx and CO of all the stacks shall be carried out. Low NOx burners shall be installed.	Complied Analyzers have been installed at CCR & NHT stacks for continuous on-line monitoring of SO2 and NOx. Low NOx burners have been installed at CCR & NHT furnaces. Please Refer GTU compliance report as on 31.03.2019 for further details.
iv.	The process emissions {SO2, NOx, HC (Methane & Non methane)}, VOC's and benzene from various units shall conform to the standards prescribed under Environment (Protection) Act. 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 of the pollution control device has been achieved.	The following features at CCR ensure process emissions to confirm to the standards prescribed under EPA • Amine treated fuel gas and RLNG is being fired in the furnaces • Air preheated provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O2 • Stacks of adequate height CCR (88.5m), NHT (75 m).

		At BPCL refinery, Ambient Air Quality monitoring is carried out on regular basis which includes parameters SOX, NOx, CO, O3, NH3, PM-10. PM-2.5, Hydrocarbon. Also analyzers have been installed at each AMS for transmitting data to MPCB/ CPCB server. Ambient air quality as monitored at BPCL is attached as **Annexure-7.**
v.	Leak detection and Repair program shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of storage tank yards etc must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	LDAR program is already being followed in the existing refinery. Pumps, Valves, flanges, pump seals, equipments, etc are being regularly monitored for identifying and rectifying sources of VOC emissions. HC leak detectors have been provided in the plant area at strategic locations. LDAR program is carried out on quarterly basis in Aromatics complex and Product Dispatches (TDU). The frequency of monitoring has been revised as per GSR 186 (E) rule for all process plants. Please refer **Annexure-11** for typical LDAR monitoring report.
vi.	SO2 emissions after expansion from the plant shall not exceed 12 TPD. Sulfur recovery units shall be installed for control of H2S emissions. The overall sulfur recovery efficiency of Sulfur recovery units with tail gas treating shall not be less than 99.9%.	Amine treated refinery fuel gas is being used as fuel in the CCR & NHT furnaces. Efficiency of existing Sulfur Recovery Units (SRU) is 99%. In Nov-2017, Tail Gas Treatment Unit (TGTU) has been commissioned which has improved sulfur recovery efficiency to 99.99 %. As cited in Environment Clearance received for CDU-4 project (commissioned in Dec-2015), SO2 emissions from refinery are well below 10.44 MT/D. Please refer **Annexure- 12** for further details.
vii.	As proposed, record of sulfur balance shall be maintained at the refinery as a part of the environmental data on regular basis. The basic component of sulfur balance include sulfur input through feed (sulfur content in the crude oil), sulfur output from refinery through products, by products, atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as **Annexure-12.**
viii.	Ambient Air quality monitoring stations {PM10, PM 2.5, SO2, NOx, H2S, mercaptan, non methane-HC and benzene shall be set up in the complex in	Ambient Air Quality Monitoring Stations exist in the refinery for on-line monitoring concentration of PM-2.5, SO2, NOx, H2S, CO, Methanic & non

	consultation with Maharashta Pollution Control Board 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.	methanic hydrocarbons, ozone, ammonia, benzene and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity at AMS. Please refer GTU compliance report as on 31.03.2019 for further details.
ix.	Ambient air quality data shall be collected as per N AAQES standards notified by the ministry on 16th November 2009 and trend analysis wrt past monitoring results shall be also carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Ambient air quality data is being collected at three locations in the existing refinery. The quality is conforming to the standard as specified in the NAAQS. Ambient air Quality report at BPCL is attached as **Annexure-7.**
x.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides acoustic enclosure/silencer shall be installed where ever noise pollution exceeds the limit.	Not Applicable Power is being provided to CCR unit from Captive Power Plant existing at the refinery or is being imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipments in the refinery only in case of total power failure.
xi.	Total raw water requirement for the proposed project shall not exceed 4995 m3/day and prior permission shall be taken from competent authority. Industrial effluent generation from CCR unit shall not exceed 129 m3/day. Industrial effluent shall be treated in effluent treatment plant. Treated effluent shall be recycled /re-used in the existing cooling tower. Domestic sewage shall be treated in sewage treatment plant. (STP)	Complied. Treated effluent is fully recycled /re-used in the existing process cooling towers. New Sewage Treatment plant with a capacity of 250 CMD has been commissioned in the month of Dec'2014. Treated water at RCF STP unit is received in BPCL process cooling Tower which has reduced fresh make up water. Please refer **Annexure-1** for Water Balance.
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Complied. There are 3 oil catchers inside BPCL premises equipped with all facilities for removal of oil.
xiii.	Oily sludge shall be disposed off into Coker. Annual oily sludge generation and disposal data shall be submitted to the ministry's Regional office and CPCB.	Not Applicable There is no coker installed at BPCL Mumbai Refinery. There is no oily sludge generation from CCR complex.

		Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery and the residual sludge is bio-remediated to reduce oil content below 0.5 wt% before it can be disposed off as per Hazardous waste Rule 2016.
xiv.	The company should strictly comply with the rules and guidelines under manufacture, storage and import of hazardous chemicals Rules 1989 as amended in October 1994 and January 2000.Hazardous waste should be disposed off as per Hazardous waste (Management, Handling and Trans-boundary movement) rules 2008 and amended time to time.	Complied Spent catalyst gets generated from various catalyst beds during turnarounds. As per MPCB consent for 2017-18, Form IV was submitted to MPCB office on 14th June-2018.
xv.	The membership of common TSDF should be obtained for the disposal of hazardous waste.Copy of authorization or membership of TSDF should be submitted to Ministry's regional office at Bhopal.Chemical/inorganic sludge shall be sent to Treatment storage disposal facility (TSDF) for hazardous waste.Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership with M/s Mumbai Waste Management Ltd. Membership certificate is attached as **Annexure-2.**
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Closed sampling system has been provided to avoid spillage/leakage of oil. Vacuum operated trucks are available to take care of any spillage. Close Blow down system is operational for close draining of hydrocarbons during maintenance activity. Oil catchers are provided for removing oil from water going out of refinery.
xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP)	Complied. Please refer **Annexure-13.**
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 33% of the plant area in and around the plant premises to	Please refer GTU compliance report as on 31.03.2019.

	mitigate the effect of fugitive emissions all around the plant as per the CPCB guidelines.	
xx.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan, and safety guidelines shall be implemented.	Quantitative Risk Assessment for BPCL MR considering CCR and CDU/VDU-4 project was carried out by M/s EIL. All the recommendations for mitigating risks are being implemented. As per ER DMP Act, new Emergency Response Disaster Management Plan prepared, and same has been approved and certified by DMI (Disaster Management Institute) Bhopal in June-13.
xxi.	All the issues raised and commitment made during public hearing/consultation meeting held on the 25th September 2012 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.	The following commitments made during public hearing are complied: • Continue the existing mock drills • Ensure adherence to on-site and offsite DMP • Use of clean fuel to ensure no impact on SO2 emission • Installation of Low NOx burners
xxii.	Company shall adopt Corporate Environment policy as per ministry's O.M. No J-11013/41/2006-IA II(I) dated 26th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated Management System.
xxiii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc.The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing facilities was provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such as mobile toilets, clean drinking water, and emergency medical facility was also provided during construction at CCR site and these facilities are being provided during all projects.

SR. NO.	GENERAL CONDITIONS	STATUS as on 31.03.2019
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), state government and any other statutory authority.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed from those submitted to this Ministry for clearance, a fresh	Noted

	reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required , if any	
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	Complied OISD check listing of facilities prior to commissioning was done in the month of May-13. Project was commissioned on 4th Mar-2014.
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring is being carried out in the periphery of the refinery including process plants.
v.	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPC refinery already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environment and Forests as well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Please refer **Annexure-8.**
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Complied. Six monthly compliance report is submitted regularly for the Environmental Clearances granted to BPCL MR to western region of MOEF office Nagpur, Vadodara zonal office of CPCB, and MPCB office.

viii.	A copy of clearance letter shall be sent by the 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. The clearance letter shall also be put on the web site of the company by the proponent.	Complied. Please refer GTU compliance report as on 31.03.2019.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the regional office of MoEF, the respective zonal office of CPCB, and the SPCB.The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Six monthly compliance statement of EC is sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB office. The compliance report is also posted on the BPCL corporate website. Environmental display board has been provided at Main gate of the refinery which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB.The Regional office of this ministry,/CPCB/SPCB shall monitor the stipulated conditions.	Complied. The six monthly compliance statement to EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website.
xi.	The Environmental statement for each financial year ending 31st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	Complied. Duly filled form V (Environment Statement) for every financial year is submitted to MPCB office before 30th Sept of every assessment year. Please refer GTU compliance report as on 31.03.2019.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website o Ministry of Environment and Forests at http:/envfor.nic.in. This shall be advertised within	Subsequent to obtaining Env. Clearance from MoEF for CCR (1.2 MMTPA), the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 13th of June 2013.

	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 vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	
xiii.	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 commencing the land development work.	Noted.

Compliance Status Report for Diesel Hydro treatment Unit (DHT) & associated facilities to produce 100% BS-IV HSD

EC Letter no. J-11011/21/2013-1A II (I) dated 13thAug-2015

As per stipulations given in the Environmental Clearance for Diesel Hydro Treatment (DHT) Unit & associated facilities to produce 100% BS-IV HSD.

DHDT Unit was commissioned on 26/06/2017.

Specific Conditions:

Sr. No.	SPECIFIC CONDITION	STATUS as on 31.03.2019
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-IA II(I) dated 28th April, 2008 , F.No.J-11011/140/2012-IA II I dated 12th June 2013, J-11011/582/2011-IA II (I dated 7th June 2013and J-11011/270/270/2013-IA (I) dated 8th August 2014 , shall be satisfactorily implemented and compliance reports submitted to Ministry's regional office at Bhopal.	Compiled Compliance reports are regularly sent to MoEF & CC Western Regional office at Nagpur.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18th March, 2008.	Complied
III.	Continuous on-line stack monitoring for SO2, NOx and CO of all the stacks shall be carried out. Low NOx burers shall be installed.	Analyzers are installed at DHT stacks for continuous on-line monitoring of SO2, NOx CO and SPM. Low NOx burners are provided. Please refer GTU compliance report as on 31.03.2019.

Iv	The process emissions [SO2, NOx, HC (Methane & No-methane)], VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. 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 shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	The following features at DHDT process emissions to conform with the standards prescribed under EPA • Fuel gas is fired in the furnaces. • Air pre-heater provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O2. • Stacks of adequate height. At BPCL refinery, Ambient Air Quality monitoring is carried out on regular basis which includes parameters SOX, NOx, CO, O3, NH3, PM-10. PM-2.5, Hydrocarbon. Also analyzers have been installed at each AMS for transmitting data to MPCB/ CPCB server. Ambient air quality as monitored at refinery is attached as **Annexure-7.**
v.	Leak Detection and Repair program shall be prepared and implemented to con HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	LDAR program is already being followed in the existing refinery. Compressors, exchangers, pumps, valves, equipment's, etc are being regularly monitored for identifying VOC emissions and rectifying the identified leaks. HC leak detectors are provided in the plant area at strategic locations. Preventing maintenance schedule exists for all critical pumps / compressors and is being adhered to. LDAR program is carried out on quarterly basis in Aromatics complex and Product Dispatches (TDU). The frequency of monitoring has been revised as per GSR 186 (E) rule for all process plants. Please refer **Annexure 11** for typical LDAR report.
vi.	SO2 emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H2S emissions.	Complied. Tail Gas Treatment Units (TGTU) is commissioned in Nov-2017 for improving SRU efficiency to 99.9 %. Please refer **Annexure- 12.**
vii	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as **Annexure-12**

viii	Ambient air quality monitoring stations, [PM10, PM2.5, SO2, NOx, H2S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, 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.	Three Ambient Air Quality Monitoring Stations are existing in the refinery. On-line monitoring of PM-10, PM-2.5, SO2, NOx, H2S, CO, Methanic & non methanic hydrocarbons, benzene, Ammonia, Ozone and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity is being carried out as per National Ambient Air Quality Standards (NAAQS). Real time data is continuously sent to CPCB / MPCB site. Please refer **Annexure-9** for environment monitoring reports.
ix	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16th November,2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Ambient air quality data is being collected at three locations in the existing refinery. The quality is conforming with the standard as specified in the NAAQS. Ambient air Quality at North west corner of Refinery is attached as **Annexure-9**
x.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Complied Power is supplied to DHT unit from Captive Power Plant existing at the refinery. Additional requirement of power shall be imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipment's in the refinery only in case of total power failure.
xi.	Total fresh water requirement from Municipal Corporation of Greater Mumbai after expansion shall not exceed 16,100m3/day. After expansion and prior to permission shall be obtained from competent authority.	Complied. Please refer GTU compliance report as on 31.03.2019. Please refer **Annexure-1** for Water Balance.
xii	Industrial effluent generation shall not exceed 155 m^3 /Hr and treated in effluent treatment plant. Treated effluent shall be fully as make-up water for raw water cooling towers. Domestic Sewage shall be treated in sewage treatment plant (STP)	Treated effluent is fully recycled as make water to various raw water cooling towers in the Refinery. A new Sewage Treatment plant with a capacity of 250 CMD for administrative block has been commissioned in Dec 2014. Please refer **Annexure-1** for Water Balance. BPCL has provided analyzers for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server.
xiii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Complied. Oil catchers equipped with skimmers, weirs, drum skimmer, rope skimmer, hay filters etc have been provided.

		Please refer GTU compliance report as on 31.03.2019.
xiv.	As committed, BPCL needs to implement the outcome of study for water reduction and its optimize use as result of water auditing. No process effluent shall be discharged outside the premises.	Complied. Treated effluent is fully recycled as make water to various raw water cooling towers in the Refinery. BPCL has provided analyzers for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server. Please refer **Annexure-1** for Water Balance.
xv.	Automatic /online monitoring system (24X7 monitoring devices) For flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to respective SPCB, Regional office of MoEF & CC and Company's site	Complied. BPCL has provided analyzers for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server. Please refer GTU compliance report as on 31.03.2019.
xvi.	Oily sludge shall be disposed off into Cocker. Annual oily sludge generation and disposal data shall be submitted to Ministry of Regional offices and CPCB.	Not Applicable There is no coker installed at BPCL Mumbai Refinery.
xvii.	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules,1989 as amended in October, 1994 and January,2000 Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time	Complied. Please refer GTU compliance report as on 31.03.2019.
xviii.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which is authorized TSDF. Membership certificate is attached as **Annexure-2.**
xix.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Complied Please refer GTU compliance report as on 31.03.2019.
xx	Acoustic enclosure/silencer shall be installed wherever it is possible.	Please refer GTU compliance report as on 31.03.2019.
xxi	The company shall strictly follow al the recommendations mentioned in the charter on	Please refer **Annexure-13** for details of Corporate Responsibility for Environmental protection (CREP).

	Corporate Responsibility for Environmental protection (CREP).	
xxii.	To prevent fire and explosion at oil and gas facility ,potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition source and flammable material shall be in place	Complied.
xxii.	To prevent fire & explosion at oil & gas facility, potential ignition, sources and flammable materials shall be in place.	Complied.
xxiii.	Thick greenbelt with suitable plants species shall be developed around unit, Selection of plants a per CPCB guidelines.	Please refer GTU compliance report as on 31.03.2019.
xxiv.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	Implemented.
xxv.	At least 2.5% of the total cost of the project shall be unmarked towards the Enterprise social responsibility based on need of the affected people with consultation of local Administration and item-wise details along with long time bound action plan shall be prepared and submitted TO Ministry of Regional Office at Bhopal. Implementation of such program shall be ensured accordingly in a time bound manner.	Complied. Please refer GTU compliance report as on 31.03.2019.
xxvi	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Project is completed and Commissioned.

B.GENERAL CONDITIONS:

Sr. No.	Condition	Status
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), state government and any other statutory authority.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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	Complied

	additional environmental protection measures required , if any.	
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	Compiled. CCOE, OISD and other approvals taken prior to commissioning of the plant.
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Complied. Please refer GTU compliance report as on 31.03.2019.
v.	A separate environmental management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL refinery already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory.
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost for environment pollution control measures and shall be sued to implement the conditions stipulated by MOEF as well as state government along with implementation schedule for all the conditions stipulated herein. Funds so provided should not be diverted for any other purpose.	Adequate funds are being provided for environment pollution control measures. Various Environment projects incurring capital expenditure are being carried out regularly. List of recent environmental projects is attached as **Annexure-3.**
vii.	The Regional office of the Ministry/ data and the statistical interpretation shall be submitted CPCB will be monitor stipulated conditions. A six monthly compliance report and the monitored regularly.	Complied Six monthly compliance report is regularly sent to MOEF&CC WR office.
viii.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zillparishad / Municipal Corporation Urban Local Body and Local NGO, if any from whom any suggestions / representations, if any, here received while processing proposal. The clearance letter shall be put on web site of company proponent.	Complied. Please refer GTU Compliance report as on 31.03.2019.

ix.	The project proponent shall upload the status of compliance of stipulated environment clearance conditions, including results of monitored data on their website and shall update the same update periodically. It should simultaneously send to Regional office of MoEF, the respective Zonal office of CPCB and SPCB. .The criteria of pollutant levels namely PM_{10},$PM_{2.5}$,SO_2,NOX,HC (Methane & Non-Methane) , VOC's(ambient levels as well as stack emission)or critical sect oral of parameters, indicated for projects shall be monitored and displayed at the convenient location near main gate of the company in public domain.	Complied. Six monthly compliance statement of EC is being sent to the regional office of MoEF&CC, Nagpur zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website. Environmental display board has been provided at the main gate of the refinery, which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on status of compliance of stipulated environmental conditions including results of monitored data (both in hard copies as well as by email) to the Regional office of MoEF, the respective Zonal Office of CPCB and SPCB. The Regional Office of Ministry/CPCBSPCB shall monitor the stipulated conditions.	Complied. Six monthly compliance statement of EC is being sent to the regional office of MoEF&CC, Vadodara zonal office of CPCB and MPCB office.
xi.	The Environmental Statement for each financial year ending 31st March in Form-V as mandated to be submitted by project proponent concerned SPCB as prescribed under Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the web site of company along with compliance of Environmental conditions and shall also be sent to respective Regional Office of MoEF by e-mail.	Complied Please refer GTU compliance report **as on 31.03.2019**.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website of Ministry of Environment and Forests at http:/envfor.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 vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	Subsequent to obtaining Env. Clearance from MoEF & CC for DHT, dt 13th August-15, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 25thAugust-2015.
xiii.	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 commencing the land development work.	The date of financial closure shall be informed to the appropriate authorities.

Compliance Status Report for Construction of new Crude Distillation Unit and Vacuum Distillation Unit as a replacement of two old crude and vacuum units at BPCL Mumbai Refinery.

EC Letter no. J-11011/140/2012-1A II (I) dated 12th June 2013

The Ministry of Environment and Forests accorded environmental clearance for the project as per EIA Notification dated 14th September 2006.

Status of the projects (as of 1.07.2016)

As per the stipulations given in the Environmental Clearance for construction of new CDU/VDU (CDU4) as a replacement of two old units,

CDU-4 Unit was commissioned on 30/11/2015

SPECIFIC CONDITIONS:

Sr. No.	SPECIFIC CONDITION	STATUS as on 31.03.2019
I	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-1A II (I) dated 28th April 2008 shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office at Bhopal.	Compliance reports are being regularly sent to MoEF western Regional office Nagpur.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18th March,2008 and GSR 820(E) dated 9th November-2012	Being complied with.
III.	Continuous on-line stack monitoring for SO2, NOx and CO of all the stacks shall be carried out. Low NOx burners shall be installed.	Analyzers are installed at new CDU/VDU (CDU4) stacks for continuous on-line monitoring of SO2, NOx, and CO. Low NOx burners are provided. Please refer GTU compliance report as on 31.03.2019 for further details.
Iv	The process emissions [SO2, NOx,HC (Methane & No-methane)]. VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. 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 shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	The following features at new CDU/VDU (CDU4) will ensure process emissions to conform with the standards prescribed under EPA • Low sulfur fuel is fired in the furnaces • Air pre heater provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O2 • Stacks of adequate height.

		Please refer GTU compliance report as on 31.03.2019 for further details.
v.	Leak Detection and Repair programme shall be prepared and implemented to con HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive maintenance of pumps, valves, pipelines are requited. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	LDAR program is already being followed in the existing refinery. Valves, pumps, pipelines, equipment's, etc are being regularly monitored for identifying and rectifying sources of VOC emissions. HC leak detectors have been provided in the plant area at strategic locations. Preventive maintenance schedule exists for all critical pumps/compressors and is being adhered to. LDAR program is carried out on quarterly basis in Aromatics complex and Product Dispatches (TDU). The frequency of monitoring has been revised as per GSR 186 (E) rule for all process plants. Please refer **Annexure-11** for typical LDAR report details.
vi.	SO2 emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H2S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9 %.	Please refer GTU compliance report as on 31.03.2019 for further details.
vii	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content incrude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as **Annexure-12**
Viii	Ambient air quality monitoring stations,[PM10,PM2.5,SO2, NOx, H2S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, 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.	Three Ambient Air Quality Monitoring Stations (AMS 1/2/3) exist in the refinery for on-line monitoring concentration of PM-2.5, SO2, NOx, H2S, CO, Methanic & non methanic hydrocarbons, ozone, ammonia, benzene and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity. Online Data already sent to CPCB site. Please refer GTU compliance report as on 31.03.2019 for further details.
Ix	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16th	Ambient air quality data is being collected at three locations in the existing refinery. The

	November-2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	quality is conforming to the standard as specified in the NAAQS. Air Monitoring Report at BPCL is attached as **Annexure-7.**
x.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigare the noise pollution. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Noted. Power will be supplied to new CDU/VDU (CDU4) unit from Captive Power Plant existing at the refinery, or shall be imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipments in the refinery only in case of total power failure.
xi.	Total raw water requirement from Municipal Corporation of Greater Mumbai water supply shall not exceed 687.4 m3/hr and prior permission shall be obtained from the competent authority. Industrial effluent generation from new CDU/VDU project shall be 60 m3/hr and treated in the effluent treatment plant. Treated effluent shall be recycled /reused recycled as make up for the raw water cooling tower. Domestic sewage shall be treated in sewage treatment plant (STP).	Raw water requirement for refinery and generation of effluent from new CDU/VDU (CDU4) is complied with. Treated effluent water from ETP is fully recycled to various raw water cooling towers as make up. A new Sewage Treatment plant with a capacity of 250 CMD has been commissioned in the month of Dec'2014. Please refer GTU compliance report dated 1st Oct-2018 for further details. Please refer **Annexure-1** for Water Balance.
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Please refer GTU compliance report dated as on 31.03.2019 for further details.
Xiii	Oily sludge shall be disposed off into Coker. Annual Oily sludge generation and disposal data shall be submitted to the Ministry's Regional Office and CPCB.	Not applicable There is no Coker installed at BPCL Mumbai Refinery. Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery, and the residual sludge is bio remediated using Oil Zapper bacteria supplied by M/S OTBL. Data related to oily sludge is submitted to state pollution Control Board MPCB.
xiv	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules,1989 as amended in October, 1994 and January,2000 Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time	Please refer GTU compliance report as on 31.03.2019 for further details.

xv	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which are authorized TSDF. Membership certificates are attached as **Annexure-2.**
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Proper oil spillage prevention management plan exists. Closed sampling system has been provided to avoid spillage/leakage. Vacuum operated truck system is available in the refinery to take care of any spillages. Please refer GTU compliance report as on 31.03.2019 for further details.
xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Please refer Annexure-13 for details Corporate Responsibility for Environmental Protection (CREP).
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 45 acres area land around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Think greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.	New CDU/VDU (CDU4) unit is within the premises of existing Mumbai Refinery. Tree plantation is restricted around to new CDU/VDU (CDU4) due to space constraint and safety considerations. Please refer GTU compliance report as on 31.03.2019.
xx.	All the issues raised and commitment made during the public hearing/consultation meeting held on 25th September,2012 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.	Points were addressed during public hearing are complied
xxi	Based on Hazop study carried out and recommendation to reduce the risk shall be expediously implemented, and report sent to regional office of ministry	Complied.
xxii	Company shall adopt Corporate Environment policy as per ministry's O.M. No J-11013/41/2006-IA II(I) dated 26th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated management systems is in place.
xxiii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking,	Housing facilities were provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such

	mobile toilets, safe drinking water, medical health care, crèche etc.The housing may be in the form of temporary structures to be removed after the completion of the project.	as mobile toilets, clean drinking water, and emergency medical facility were also provided for construction labour at to new CDU/VDU (CDU4) site.

A. GENERAL CONDITIONS :

Sr. No.	Condition	Status as on 31.03.2019
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), state government and any other statutory authority.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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.	Complied
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	CCOE, OISD and other approvals taken before commissioning of the plant.
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring carried out in the periphery of the refinery confirms the same.
v.	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL MR already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environmnet and Forests as well as state	Adequate funds are being provided for environmental pollution control measurement. Various Environmental projects incurring capital expenditure are being carried out regularly. List

	government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	of recent Environmental projects is attached as **Annexure-8.**
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Six monthly compliance report is submitted for the Environmental Clearances granted to BPCL MR to WR office of MoEF & CC.
viii.	A copy of clearance letter shall be sent by the 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. The clearance letter shall also be put on the web site of the company by the proponent.	Please refer GTU compliance report as on 31.03.2019 for further details.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the regional office of MoEF, the respective zonal office of CPCB, and the SPCB.The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain	Six monthly compliance statement to EC is sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website. Environmental display board has been provided at the main gate of the refinery, which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB. The Regional office of this ministry,/CPCB/SPCB shall monitor the stipulated conditions.	Six monthly compliance statement to EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website.
xi.	The Environmental statement for each financial year ending 31st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail	Duly filled form V (Environment Statement) being submitted to MPCB for the financial year before the 30th of September. Please refer GTU compliance report as on 31.03.2019 for further details.

xviii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website o Ministry of Environment and Forests at http:/envfor.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 vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	Subsequent to obtaining Env. Clearance from MoEF for CDU/VDU, dt 12th June-13, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 18th of June 2013.
xix.	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 commencing the land development work.	Shall be informed to the appropriate authorities

Compliance Status Report for Conversion of existing Catalytic Reformer Unit (CRU) to Isomerization Unit and revamp of existing Naphtha Hydro desulfurization Unit (NHDS) at BPCL Mumbai Refinery (MR)

EC Letter no. J-11011/270/2013-1A II (I) dated 8th Aug 2014

As per the stipulations given in the Environmental Clearance for Conversion of existing Catalytic Reformer Unit (CRU) to Isomerization Unit and revamp of existing Naphtha Hydro desulfurization Unit (NHDS), the detailed compliance status is given below:

Isomerization Unit was commissioned in Feb-2017.

Sr. No.	Specific Condition	Status as on 31.03.2019
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-IA II(I) dated 28th April, 2008 , F.No.J-11011/140/2012-IA II I dated 12th June 2013 shall be satisfactorily implemented and compliance reports submitted to ministry's regional office at Bhopal.	Complied.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18th March,2008 and GSR 820(E) dated 9th November 2012.	Complied.
iii.	Continuous on-line stack monitoring for SO2,NOx and CO of all the stacks shall be carried out. Low NOx burners shall be installed.	Analyzers are installed at ISOM stack for continuous on-line monitoring of SO2, NOx CO and PM. Low NOx burners are provided.
iv.	The process emissions [SO2,NOx,HC (Methane & No-methane)]. VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. 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 shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	Please Refer GTU compliance report as on 31.03.2019 for further details.
v.	Leak Detection and Repair programme shall be prepared and implemented to con HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive	LDAR programme is already being followed in the existing refinery. Valves, pumps, pipelines, equipment's, etc are being regularly monitored for identifying

	maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	VOC emissions and rectifying the identified leaks. HC leak detectors have been provided in the plant area at strategic locations. Preventive maintenance schedule exists for all critical pumps/compressors and is being adhered to. LDAR program is carried out on quarterly basis in Aromatics complex and Product Dispatches (TDU). The frequency of monitoring has been revised as per GSR 186 (E) rule for all process plants. Please refer **Annexure-11** for LDAR report details.
vi.	SO2 emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H2S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9 %.	Tail Gas Treatment Units (TGTU) was commissioned for increasing existing SRU efficiency to 99.9%.
vii.	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as **Annexure-12.**
viii.	Ambient air quality monitoring stations, [PM10, PM2.5, SO2, NOx, H2S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, 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.	Please Refer GTU compliance report as on 31.03.2019 for further details.
ix.	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16th November,2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Please Refer GTU compliance report as on 31.03.2019 for further details.
x.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Compiled Power will be supplied to ISOM unit from Captive Power Plant existing at the refinery, or shall be imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipments in

		the refinery only in case of total power failure.
xi.	Total raw water requirement from Municipal Corporation of Greater Mumbai water supply shall not exceed 16500 m3/day. Industrial effluent shall be treated in the effluent treatment plant. Treated effluent shall be recycled/reused recycled as make up for the raw water cooling tower. Domestic sewage shall be treated in sewage treatment plant (STP).	Complied. Treated effluent water from ETP is fully recycled to various raw water cooling towers as make up. A new Sewage Treatment plant with a capacity of 250 CMD for administrative block has been commissioned in Dec 2014. Please refer **Annexure-1** for Water Balance.
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Oil catchers equipped with skimmers, weirs, oil adsorbent booms, pillows, hay filters etc have been provided.
xiii.	Oily sludge shall be disposed off into Coker. Annual Oily sludge generation and disposal data shall be submitted to the Ministry's Regional Office and CPCB.	Not Applicable There is no coker installed at BPCL Mumbai Refinery. Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery, and the residual sludge is bio-remediated using Oil Zapper bacteria supplied by M/S OTBL. Report regarding sludge is sent to MPCB.
xiv.	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000 Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time.	Complied.
xv.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which is authorized TSDF. A membership certificate is attached as **Annexure-2.**
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Proper oil spillage prevention management plan exist. Closed sampling system has been provided to avoid spillage/leakage of oil. Vacuum operated truck system is available in the refinery to take care of any spillages.
xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Please refer **Annexure-13** for details of Corporate Responsibility for Environmental Protection (CREP).
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the

	between potential ignition sources and flammable materials shall be in place.	design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 45 acres area land around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Thin greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.	Please refer GTU compliance report as on 31.03.2019 for further details.
xx.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	Please refer GTU compliance report dated 1st Oct-2018 for further details.
xxi.	Company shall adopt Corporate Environment Policy as per the Ministry's OM No J-11013/41/2006-IA II(I) dated 26th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated management systems is in place.
xxii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing facilities was provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such as mobile toilets, clean drinking water, and emergency medical facility was also provided for construction labour at ISOM site.

Sr. No.	General Condition	Status as on 31.03.2019
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), state government and any other statutory authority.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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	Complied
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	Complied

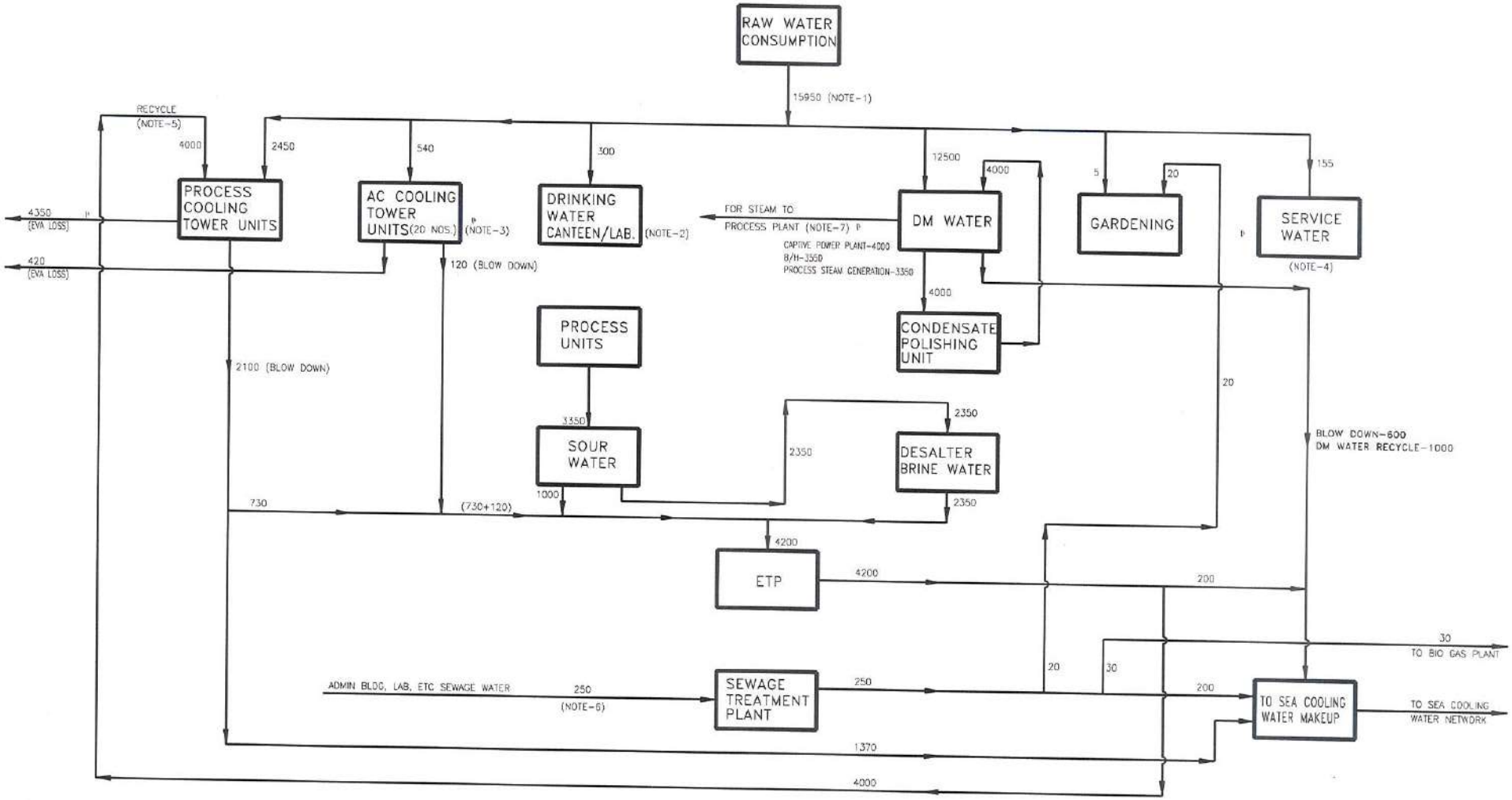
iv.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Complied
v.	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL MR already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory.
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environment and Forests as well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Various Environmental projects incurring capital expenditure are being carried out regularly. List of recent Environmental projects is attached as **Annexure-3**
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Six monthly compliance Report is submitted for the Environmental Clearances granted to BPCL MR to WR office of MoEF & CC.
viii.	A copy of clearance letter shall be sent by the 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. The clearance letter shall also be put on the web site of the company by the proponent.	Compiled.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the regional office of MoEF, the respective zonal office of CPCB, and the SPCB.The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Complied Environmental display board has been provided at Refinery Main Gate which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including	Six monthly compliance statement of EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB, and

	results of monitored data (both in hard copies as well as by e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB. The Regional office of this ministry,/CPCB/SPCB shall monitor the stipulated conditions.	MPCB. The compliance report is also posted on the BPCL corporate website.
xi.	The Environmental statement for each financial year ending 31st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	Please refer GTU compliance report as on 31.03.2019 for further details.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website o Ministry of Environment and Forests at http:/envfor.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 vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	Subsequent to obtaining Env. Clearance from MoEF for ISOM, dt 8th August-14, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 3rd of September 2014.
xiii.	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 commencing the land development work.	Compiled

Annexure:

- Annexure 1 Water Balance
- Annexure 2 MWML Membership Certificate
- Annexure 3 Tree Plantation Certificate from APMC
- Annexure 4 Tree Plantation MWML Certificate
- Annexure 5 Tree Plantation TMC
- Annexure 6 ESC expenditure details
- Annexure 7 Monitoring of environment parameters
- Annexure 8 Environmental Projects year wise details
- Annexure 9 Environment statement 2017-18
- Annexure 10 Paper Adv MT Mumbai 07 04 2017
- Annexure 10a Paper Adv MT Mumbai 07 04 2017
- Annexure 11 Typical LDAR reports
- Annexure 12 SO_2 emissions and Sulfur Balance
- Annexure 13 Corporate Responsibility for Environmental Protection
- Annexure 14 Sea water intake details for 2017-18
- Annexure 15 Refinery configuration and Product portfolio
- Annexure 16 EC details Date of EC received_ Advt._ Unit commissioned
- Annexure-17 Details of Hydrocracker fire
- Annexure 18 Compliance Monitoring Report

RAW WATER BALANCE FOR BPCL MUMBAI REFINERY



NOTES:

1. ALL UNITS ARE IN M^3/DAY.
2. DRINKING WATER IS USE FOR DRINKING PURPOSE, IN CANTEEN FOR WASHING, FOOD PREPARATION & LABORATORY.
3. COOLING TOWER A/C CONSISTS OF 20 NOS. OF PROCESS UNITS AIR CONDITIONING / ELECTRICAL SWTICH HOUSE, ALL OVER REFINERY & ADMINISTRATION BLDG.
4. SERVICE WATER IS USE IN PROCESS UNIT FOR CLEANING OF AIR FINE COOLERS, HYDROTESTING OF HEAT EXCHANGERS POST CLEANING AND FLUSHING OF PROCESS PIPELINE.
5. BASED ON INTERNAL OPTIMISATION BY MAXIMUM RAW WATER RECYCLE AND MINIMUM STEAM CONSUMTION.
6. BASED ON ADMIN BUILDING, MEDICAL CENTRE, LABORATORY, FIRE STATION & CANTEEN SEWAGE WATER QUANTITY.
7. MAJOR STEAM CONSUMPTION IN STEAM EJECTORS , STEAM REBOILERS , STEAM TO HEATING COILS , STEAM TRACING ETC.

ABBREVIATIONS:

ETP – EFFLUENT TREATMENT PLANT
CPP – CAPTIVE POWER PLANT
B/H – BOILER HOUSE
CT – COOLING TOWER
A/C – AIR CONDITIONING

भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड
Bharat Petroleum Corporation Ltd.

RAW WATER BALANCE FOR BPCL MUMBAI REFINERY

2016-17 FSK-2839

Annexure : I

Annexure : 2

An ISO 9001:2015, ISO 14001 : 2015 & OHSAS 18001 : 2007 Certified Company

NABL

RAMKY GROUP

Towards sustainable growth

bsi.

Mumbai Waste Management Limited

Certificate

M/S. Bharat Petroleum Corporation Ltd. Mumbai - Refinery

is a registered member of

CHW-TSDF at MIDC, Taloja

for safe & secure disposal of

Hazardous Waste.

Membership no.: MWML - HzW - MUM - 3247

This Certificate is valid up to

March, 31st, 2020

Somnath Malgar
Head - MWML

Dinkar Adhav
Director

MWML Laboratory is accredited by NABL and Approved by MoEF

Annexure : 3

Mumbai Agricultural Produce Market Committee, Mumbai
(ESTD. 1977)

HEAD OFFICE : Central Building, Sector-18, Vashi, Navi Mumbai - 400 703
BRANCH OFFICE : Shri Chhatrapati Shivaji Maharaj Mandai, 3rd Floor, Pattoni, Mumbai - 400 001.

TELEPHONES :
HEAD. OFF. : 2788 9416
EPABX : 2788 8414
FAX : 91-22-27889507
BRANCH OFF. : 2261 6624
FAX : 2261 4888
E-mail : mapmc@bom3.vsnl.net.in

NO.APMC/ENGG.DEPT./ 501 /14 Date : 4/12/14

To,

BPCL Mumbai Refinery,
Mahul, Chembur,
Mumbai 400 074.

Sub : Certification Letter.
Ref : Your request letter No.TA/PC/Gen-II, dtd. 27.11.2014.

Sir,

With reference to the above subject, this is to certify that BPCL Mumbai Refinery (Environment Department) has planted a total No. of 3050 tree saplings at Plot No.8 and Plot no.10 area of APMC, Sector-19, Vashi, Navi Mumbai. The plantation is covering an area of approximately 4 acres. The plantation was carried out in the monsoon season of 2014. The saplings planted are in healthy condition and have gained firm roots as on date, 30th November,2014.

Addl. Commissioner & Secretary
Mumbai APMC, Mumbai.

Annexure: 4

Mumbai Waste Management Ltd.
Plot No. P-32, MIDC Taloja, Dist. Raigad,
Tal. Panvel Maharashtra 410 208. India
Tel.: 022-2740 1468 to 71 & 2741 1473
Fax: 022-2740 1474
Email: mbdmwml@ramky.com
www.mumbaiwastemanagement.com

Date: 26/10/2016To,

To,

Bharat Petroleum Corporation Limited

8931/TA/111, Mahul, Chembur

Mumbai -400074

Sub: Tree Plantation at Mumbai Waste Management Ltd.

Kind Attn: Mr. Joshi

Dear Sir,

As you are aware that your esteemed firm had allotted 3000 trees for plantation at MWML Premises on the occasion of World Environment Day 2016.

MWML is grateful to you for this warm gesture and we would like to inform you that these trees have been planted in our premises at Taloja.

For your reference we are enclosing few photographs with this letter.

Thank You

Sincerely,

26/10/16

Authorized Signatory

Mumbai Waste Management Ltd.

Annexure : 5

दुरध्वनी :२५३३१२११
२५३३१२८०

ठाणे महानगरपालिका, ठाणे

महानगरपालिका भवन,डॉ.अल्मेडा रोड, चंदनवाडी, पांचपाखाडी, ठाणे ४००६०२
THE MUNICIPAL CORPORATION OF THE CITY OF THANE

संदर्भ क्र : ठामपा/वृप्रा/वृअ -020 दि. 23/6/२०१७

चला एकत्र येऊया : ठाणे हिरवेगार करुया !

THE MUNICIPAL CORPORATION OF THE CITY OF THANE ठाणे महानगरपालिका ठाणे

प्रति,
मे. भारत पेट्रोलियम कॉर्पोरेशन लि.,
भारत भवन, करीमभॉय रोड,
बेलार्ड इस्टेट, मुंबई. ४००००१

विषय: ५ लक्ष वृक्षलागवड योजना ...

संदर्भ : १. आपले दि.२५/०५/२०१७ रोजीचे पत्र.
२. ठामपा/वृप्रा/वृअ-५२० दि. १३/०६/२०१७
३. आपले आ.क्र. २२२९ दि. २३/०६/२०१७ रोजीचे पत्र.

महोदय,

संदर्भ क्र. २ च्या पत्रान्वये आपणास ५ लक्ष वृक्षलागवड योजनेचा शुभारंभ जागतिक पर्यावरण दिनी ५ जून २०१७ रोजी करण्यात आला असून आपणामार्फत आपल्या स्व:खर्चाने या योजनेमध्ये ५००० वृक्षांचा पुरवठा करण्याबाबत कळविले आहे.

संदर्भ क्र. ३ च्या पत्रान्वये आपणामार्फत वृक्षांचे रोपण करण्याबाबत व त्यांच्या दैनंदिन निगा व देखभालीबाबत विचारणा करण्यात आलेली आहे.

सदर अनुषंगाने आपणास कळविण्यात येते की, आपणामार्फत पुरवठा करण्यात येणाऱ्या वृक्षांचे रोपण व त्यांची दैनंदिन निगा व देखभाल ठाणे महानगरपालिकेमार्फत करण्यात येईल.

वरीलप्रमाणे रोपे उपलब्ध करुन देण्याबाबत उलट टपाली इकडे कळविण्यात यावे व रोपे पुरवठा बाबत प्रगती अहवाल gs@thanecity.gov.in या ई-मेलवर पाठविणेत यावा.

आपण पर्यावरण रक्षणासाठी ठाणे महानगरपालिकेस करीत असलेल्या सहकार्याबद्दल आभार !

23/6/2

(केदार पाटील)
वृक्षअधिकारी
ठाणे महानगरपालिका, ठाणे.

प्रत : मा. अति- आयुक्त सो यांचे माहितीसाठी सविनय सादर ...

Annexure : 6

PROPOSED "ESC" PROJECT SPENDS: 2017-18 TO 2021-22

I. 2017/18: Works to commence and implemented over 18 months.	TOTAL
1. Cleaning & Beautification of Water body – RCF Pond near Ashish Theatre. (Likely spend till March 2018: Rs. 0.15 Crore). a. Architect, Tendering, Cost Estimation & Certification Fees: Rs. 0.10 Crore b. Erecting Boundary Wall/ painting/ relaying of side walk (1.5 km length approx.) c. Internal beautification/ Lighting/ Landscaping d. Entrance Gate/ CCTV/ Water Fountain/ painting etc.	Rs. 1.50 Crores
2. MR Main gate to North Gate Boundary Wall/ Area social redesigning. (Likely spend till March 2018: Rs. 0.15 Crore). a. Architect, Tendering, Cost Estimation & Certification Fees: Rs.0.10 Crore. b. Traffic Island outside Main gate - High Mast LED Lighting/ facelift c. Barricading of Side walk (1 km approx..) d. Smoothening/ Laying Walking track/ Lighting/ CCTV at Side walk e. Painting/ Cladding/ Branding on Boundary Wall	Rs. 4.35 Crores
3. 4 RO Drinking Water System/ Plant at Mahul, Shankardeol, Vashinaka. (Likely spend till March 2018: Rs. 0.20 Crore). Estimates of Vendors sought – approx.. Rs.0.25 cr. each plant and includes: a. Borewell/ Plant - Erection/ Installation/ Commissioning b. Maintenance for 3 years	Rs. 2.00 Crores
4. Waste Disposal System implementation at Mahul/ Ambapada (Likely spend till March 2018: Rs. 0. 50 Crore) 1 year Operational / Maintenance expenditure: Rs.0.15 Crore. **(Total likely spend on above 4 Projects as detailed) - Rs. 1.00 Crore.**	Rs. 0.65 Crore
Sub Total:	**Rs. 8.50 Crores**

II. 2018/19: Works to commence and implemented in 12 months	
1. Building, Landscaping of Strategic Traffic junctions near MR/ Chembur.	Rs. 2.10 Crores
2. Completion & Expenditure on PY Works during the year.	Rs. 7.50 Crores
Sub Total:	**Rs. 9.60 Crores**

III. 2019/20: Works to commence and implemented in 12 months

1. Desilting/ Upgradation & Beautification of Mahul - Jetty/ Nallas	Rs. 2.50 Crores
2. Providing Transit camp/ Housing for MR Contract labor/ Apprentices.	Rs. 2.50 Crores
3. Preliminary work/ Approvals for setting up BPCL-MR School/ Hospital.	Rs. 1.00 Crore
4. Providing Solar Street Lights at Mahul/ MR surroundings	Rs. 1.00 Crore
5. Setting up of CT Scan/ Physiotherapy/ Dialysis Centre at Mahulgaon.	Rs. 3.50 Crores
Sub Total:	**Rs. 10.50 Crores**

IV. 2020/21-2021/22: 24 mths. Gestation for Estimates/ Approvals & Commissioning

1. Setting up Recreational/ Sports Academy at Ambapada (Detailed Project feasibility incl. land lease cost / Building Plan/ Cost of Construction to be made prior to execution).	Rs. 8.30 Crores
2. Setting up English Medium High School for locals by MR Foundation.	Rs. 12.27 Crores
3. Setting up BPCL Charitable Hospital for locals by MR Foundation.	Rs. 12.26 Crores
Sub Total:	**Rs. 32.83 Crores**

Total ESC Estimated spend over five years (2017 – 2022) I+II+III+IV **Rs. 53.93 Crores**

Annexure: 7

A] Ambient Air Monitoring stations:

- **AMS-1:**

Parameter	Unit	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	March-19
PM_{10}	($\mu g/m^3$)	73.9	80.30	83.35	86.9	89.1	84.8
$PM_{2.5}$	($\mu g/m^3$)	39.1	38.78	40.45	44.4	44.8	41.9
SO_2	($\mu g/m^3$)	15.5	12.93	13.18	13.4	13.4	11.2
NO_2	($\mu g/m^3$)	23.3	20.35	24.55	28.0	28.7	23.0
Lead	($\mu g/m^3$)	0.1	0.07	0.09	0.1	0.1	0.1
CO	(mg/m^3)	0.5	0.44	0.37	0.3	0.3	0.3
NH_3	($\mu g/m^3$)	17.9	15.20	20.00	18.4	21.0	19.2
Ni	(ng/m^3)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
As	(ng/m^3)	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0
O_3	($\mu g/m^3$)	2.5	3.78	3.18	3.2	2.9	3.5
Benzene	($\mu g/m^3$)	3.4	3.83	4.24	4.4	4.3	4.2
Benzo (a) pyrene	(ng/m^3)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HC	(ppm)	1.8	1.73	1.83	1.9	1.9	1.9

- **AMS-2:**

Parameter	Unit	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	March-19
PM_{10}	($\mu g/m^3$)	80.50	76.20	87.5	87.9	91.0	87.5
$PM_{2.5}$	($\mu g/m^3$)	42.45	37.40	43.7	46.1	49.5	48.7
SO_2	($\mu g/m^3$)	12.25	12.90	11.9	11.6	14.4	13.6
NO_2	($\mu g/m^3$)	25.25	23.10	26.1	25.5	26.8	28.4
Lead	($\mu g/m^3$)	0.10	0.07	0.10	0.1	0.2	0.1
CO	(mg/m^3)	0.38	0.44	0.4	0.4	0.3	0.5
NH_3	($\mu g/m^3$)	25.45	24.60	20.6	20.1	22.5	22.1
Ni	(ng/m^3)	#DIV/0!	<1.0	<1.0	<1.0	<1.0	<1.0

As	(ng/m³)	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0
O_3	(µg/m³)	2.10	3.20	3.0	3.5	3.4	3.2
Benzene	(µg/m³)	4.23	4.73	4.5	4.5	4.4	4.0
Benzo (a) pyrene	(ng/m³)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HC	(ppm)	1.77	1.93	1.8	1.9	1.9	1.8

- **AMS-3:**

Parameter	Unit	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	March-19
PM_{10}	(µg/m³)	84.75	87.3	90.9	91.1	92.4	93.5
$PM_{2.5}$	(µg/m³)	45.15	42.9	47.0	49.6	49.3	53.6
SO_2	(µg/m³)	14.20	13.4	12.7	12.9	13.2	12.8
NO_2	(µg/m³)	25.50	23.6	30.0	28.1	25.2	26.2
Lead	(µg/m³)	0.15	0.1	0.10	0.1	0.1	0.1
CO	(mg/m³)	0.50	0.5	0.44	0.4	0.4	0.3
NH_3	(µg/m³)	29.25	27.6	26.0	25.5	22.6	21.3
Ni	(ng/m³)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
As	(ng/m³)	<1.0	<1.0	<0.1	<1.0	<1.0	<1.0
O_3	(µg/m³)	2.00	3.6	3.1	3.5	3.4	3.6
Benzene	(µg/m³)	4.53	4.8	3.8	4.1	4.1	4.2
Benzo (a) pyrene	(ng/m³)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HC	(ppm)	1.91	2.2	1.9	1.8	1.8	1.8

B] Effluent Treatment Plant (ETP):

Parameter	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	March-19
pH	8.33	7.76	7.76	7.92	8.30	7.18
Oil & grease	2.40	2.40	2.80	3.60	2.50	1.75
BOD	10.20	11.40	9.40	12.80	9.25	10.50
COD	87.60	100.20	87.00	103.60	109.00	115
TSS	13.00	13.20	16.20	12.00	12.25	13.5

Phenolic compound	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sulphide	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cyanide as CN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ammonical Nitrogen	11.01	12.20	11.14	11.49	9.25	BDL
Total Kjeldhal Nitrogen (TKN)	23.21	20.20	26.94	29.21	28.93	35.155
Total Phosphate	<3	<3	<1.0	<1.0	<1.0	<1.0
Hexavalent Chromium	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
Total Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead (Pb)	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05
Mercury (Hg)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	0.08	<0.05	0.09	BDL	0.09	0.08
Nickel (Ni)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper (Cu)	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Vanadium (V)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (a) pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*BDL – Below Detection Limit

C] Noise Monitoring:

Noise Monitoring Survey 2018-19		
Month	**Plant**	**Points covered**
Apr	LPG	11
Apr	DM PLANT	8
Apr	CENTRAL ENGG. WORKSHOP	8
Apr	MOC / PH	3
Apr	RMP PH- DM PLANT	13
Apr	BH	7
Apr	CPP	12
May	BBU PH	5
May	CDU-4	25
May	TDU	6
Jun	CDU-VDU-3	19

Jun	NHGU	4
Jul	CCR-NHT	12
Jul	ARU	10
Aug	PH-5	5
Aug	DHDS	26
Aug	DHT	4
Aug	FLARE	2
Aug	FCCU	5
Sep	CCU Complex	31
Sep	All Gates	5
Sep	CPP	12
Sep	MOT	7
Sep	LAB	27
Oct	CPP C/T	9
Oct	DM Plant	13
Oct	SWPH	4
Oct	BH	10
Oct	LPG	14
Oct	MOC PH	3
Oct	CPP	11
Oct	All Gates	5
Oct	MINAS	7
Oct	Central Engineering Workshop	8
Nov	TDU	6
Nov	BBU	10

Nov	CDU4	25
Dec	CCR Complex	17
Dec	ARU Complex	47
Dec	CDU-3	19
Dec	CPP	11
Jan	CPP	11
Jan	Admin building area	6
Feb	HCU	15
Feb	NHGU	9
Feb	LOBS	7
Feb	PH-1/5	7
Feb	DHDS Complex	41
Feb	Flare area	2
Feb	FCCU	11
Feb	CPP	11
Cum. 18-19	**Total**	606

Annexure : 8

Annexure- 8: RECENT ENVIRONMENTAL PROJECTS COMMISSIONED & IN PROGRESS

Sr no	PROJECTS	YEAR	ENVIRONMNET IMPROVEMNET	CAPEX In Crores
1.	FCC Gasoline Splitter, DHDS & HCU revamp	2010-11	BS-III MS & HSD maximization BS-IV MS/HSD	233
2.	Oil catchers fixed roof cover	2011-12	Fugitive emission reduction	0.45
3.	Secondary seals / guide pole sleeves for crude & Hexane tanks	2011-12	VOC reduction	2.64
4.	Travelling water screen at north basin of salt water pump house	Mar-2012		2.34
5.	Procurement of drum type oil skimmers at Main Oil Catcher and OC-I	Mar-2012	To recover oil	0.64
6.	Fixed cover for FPU and CCU oil catchers	June 2012	VOC reduction	0.66
7.	Aluminum dome roof for ATF floating roof storage tank.	Sept-2012	VOC reduction	1.27
8.	De-mountable flare	Mar-2013	Better dispersion of emissions due to increased height, ease of maintenance	54.54
9.	To provide additional analyzers for monitoring PM 2.5, NH3, benzene, O3 and THC at AMS-1	Dec-2013	Monitoring Ambient Air.	1.41
10.	Continuous Catalytic Regeneration Reformer	Mar-2014	Enhanced production of BS-IV MS, and capacity building for Euro-V MS production	1827
11.	LPG pumping facilities from Refinery to Uran	Oct-2014	Reduce congestion, pollution in Mumbai and improve safety. Eliminating rail and reducing road transportation of bulk LPG from BPCL & HPCL MR 10" pipeline, 28 Kms long (12 off shore), design capacity of 1200 MT/day, Bulk lorries from BPCL will reduce by 425 MT/D (25 lorries), and 4-5 rakes	246
12.	Flare gas recovery	Nov-2014	Emission reduction (Lower flaring) and energy conservation	13.61
13.	Rain Water Harvesting at Sports Club	June-2014	Raw water conservation	1.46
14.	Internal Aluminum floating re\ SBP tank 904/905	May-2014	To reduce fugitive emission from storage tanks	0.41
15.	40 KWp solar power plant	Aug-2014	Renewable source of energy.	0.38

	at Admin south block rooftop.		Fossil fuel conservation, & reduction in GHG emissions	
16.	OC-2 & OC-3 rotating disc skimmers	Oct-2014	Skimming of oil from oil catchers.	0.73
17.	Condensate Recovery system at Boiler house	Oct-2014	Resource conservation, flash steam recovery	0.88
18.	Sewage Treatment Plant at Admin	Dec-2014	Treatment of sewage, and re-use for gardening.	0.86
19.	Replacement of old crude & Vacuum distillation units with new CDU/VDU-IV	Nov-2015	Reduce Fuel consumption and emission	1419
20.	Decantation valve for slop tanks	Sep-2015	To reduce oil loss	0.9
21.	Provision of disc type oil skimmer at OC-II middle bay	Dec-2015	Effective removal of heavy oil from oil catcher	1
22.	Aluminum Floating Roof (IFR) for HSD Fixed Roof HSD Storage Tanks Tk-432, Tk-514, Tk-516 and Tk-517.	Jun-2016	To reduce hydrocarbon Storage losses from fixed roof storage tank. Reduction in emission of VOC's.	3.1
23.	To provide all stack analyzer data to CPCB / MPCB Like- SO2 / Nox / PM10 / CO.	Aug-2016	To provide all stack analyzer data to CPCB / MPCB Like- SO2 / Nox / PM10 / CO.	12
24.	Replacement of AMS 1 & AMS 2 Analysers.	Jun-2016	To be able to monitor ambient air quality as per National standards.	2.81
25.	To provide Solar water heater at LPG canteen.	Dec-2016	Renewable source of energy. Fossil fuel conservation, & reduction in GHG emissions.	2.7
26.	Catalytic Reforming unit to Isomerization Unit (ISOM)	Feb-2017	100 % BS-IV MS production	725
27.	Diesel Hydro-treater Unit (DHT)	June-2017	100 % BS-IV HSD production	2368
28.	Tail Gas Treatment Unit (TGTU)	Nov-2017	For enhancing sulfur recovery from 99 % to 99.9 %	112
29.	Benzene Analyzer in ARU	March-2018	For Identifying and checking any leaks as well as continous monitoring of Benzene levels	115
30.	Rain Water Harvesting at CCR/ DHDS	June-2018	Water conservation	0.9
31.	Revamp of oil catcher	May-2018	Environment Protection	3.2

32.	Energy Saving by replacing conventional lighting by LED	Mar-2019	Energy conservation	0.6
33.	Installation of roof top solar panels	March-2018	Energy conservation and utilization of solar power	3.13
34.	Gasoline Treatment Unit	In progress	For making BS VI grade MS	544

Annexure : 9

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	***Consent Quantity***	***Actual Quantity***	***UOM***
Liquified Petroleum Gas, C3	643860	539408	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	***Consent Quantity***	***Actual Quantity***	***UOM***
NA	NA	NA	MT/A

1) Water Consumption in m3/day

Water Consumption for	***Consent Quantity in m3/day***	***Actual Quantity in m3/day***
Process	20405	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***		
	Quantity	***Concentration***	***%variation***	***Standard***	***Reason***
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***		
	Quantity	***Concentration***	***%variation***	***Standard***	***Reason***
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	Qty of Hazardous Waste	UOM	Concentration of Hazardous Waste
4.2 Spent catalyst	1315	MT/A	The composition details of hazardous waste is given in form 4 submitted online on 14-06-2018

2) Solid Waste

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	Environmental Protection Measures	Capital Investment (Lacks)
Mechanical means & chemical ways for recovery of oil.	Oil recovery from weathering pit and crude tank cleaning	391.1

Bio-remediatlion 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	***Environmental Protection Measures***	***Capital Investment (Lacks)***
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 & utillities	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

Annexure : 10

सर्वात तरुण महिला वैमानिक उडविणार मिग २९

म. टा. विशेष प्रतिनिधी, मुंबई

सर्वात तरुण वयात वैमानिक बनलेली मुंबईची तरुणी आयेशा अजीझ हिने आता ध्वनिपेक्षाही अधिक वेगाने आकाशात उडणारे मिग २९ हे रशियन विमान उडविण्याचे मनावर घेतले आहे. मुंबईच्या बॉम्बे फ्लाइंग क्लबमध्ये उड्डाण प्रशिक्षण घेतलेल्या आयेशाला नुकताच कमर्शिअल वैमानिकाचा परवाना हाती पडला असून, आता अंतराळयात्रेच्या तयारीसाठी रशियाच्या सोकुल हवाई तळावरून लढाऊ जेट विमान उडविण्यासाठी ती प्रयत्नशील आहे.

आयेशाचे वडील अब्दुल अजीझ हे वर्सोवास्थित व्यावसायिक असून, तिची आई मूळची काश्मिरी बारामुल्ला जिल्ह्यातील आहे. आईबरोबर श्रीनगरला जाताना आयेशा नेहमी विमानाने जायची व त्यावेळी आकाशभरारीचे स्वप्न पाहायची. ती शाळेत असतानाच तिचे वैमानिक प्रशिक्षण सुरू झाले. १६व्या वर्षीच विद्यार्थी उड्डाण परवाना मिळविणारी ती सर्वात तरुण महिला ठरली. बॉम्बे फ्लाइंग क्लबमधून तिने वैमानिक उड्डाण प्रशिक्षण घेतले. २०१२मध्ये ती नासामध्ये अंतराळवीराचे प्रशिक्षण घेण्यासाठीही गेली होती.

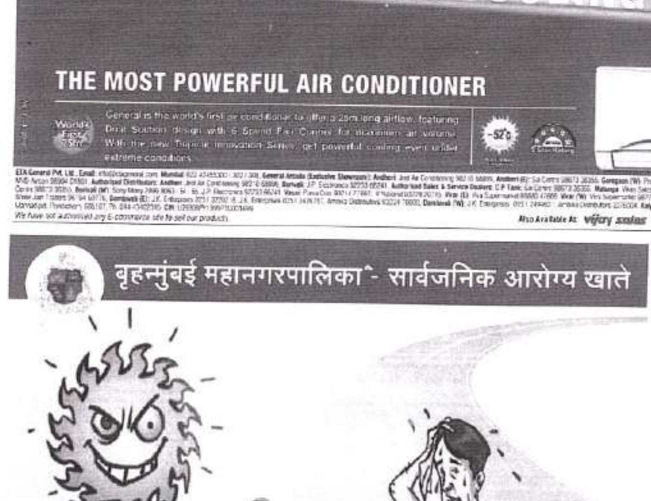
गेल्या आठवड्यात तिच्या हाती व्यापारी वैमानिक परवाना (सीपीएल) आला आणि आता तिला मिग २९ विमानाचे सारथ्य करण्याचे वेध लागले आहेत. त्यासाठी रशियन एजन्सीशी तिची चर्चा सुरू आहेत. बॉम्बे फ्लाइंग क्लबचे कॅप्टन मिहिर भागवती यांनी सांगितले की, ती आमची विद्यार्थिनी राहिली आहे. काश्मिरमधून आलेली ती पहिलीच मुलगी होती. आव्हानात्मक भरारी घेण्याचे गुण तिच्यात नेहमीच होते व मिग २९चे आव्हानही ती यशस्वीरीत्या पेलेल, असा मला विश्वास वाटतो.

पत्रकार हल्लाविरोधी विधेयक आज विधिमंडळात

मुंबई : गेल्या अनेक महिन्यांपासून प्रलंबित असलेल्या पत्रकार हल्लाविरोधी विधेयकाच्या मसुद्यास गुरुवारी राज्य मंत्रिमंडळाच्या बैठकीत मंजुरी देण्यात आली. आज, शुक्रवारी विधिमंडळ अधिवेशनाच्या अखेरच्या दिवशी हे विधेयक मांडण्यात येणार आहे.

पत्रकारांच्या संघटनांनी पत्रकारांना संरक्षण मिळावे, यासाठी पत्रकार हल्लाविरोधी कायदा करण्याची मागणी मुख्यमंत्री देवेंद्र फडणवीस यांच्याकडे केली होती. मुख्यमंत्र्यांनी ही मागणी मान्य करताना हे विधेयक या अधिवेशनात मांडण्याचे आश्वासन दिले होते.

बृहन्मुंबई महानगरपालिका - सार्वजनिक आरोग्य खाते



उष्माघातापासून संरक्षण होण्यासाठी खालील गोष्टी पाळा.

हे करा

- तहान लागलेली नसतानाही पुरेसे पाणी प्या.
- उन्हात डोक्यावर छत्री, टोपीचा वापर करा.
- डोके, गळा, चेहऱ्यासाठी ओल्या कपड्याचा वापर करा.
- सौम्य रंगाचे, सैल व कॉटनचे कपडे वापरा.
- अशक्तपणा जाणवत असेल तर त्वरीत डॉक्टरांचा सल्ला घ्या.
- प्रवास करताना पाण्याची बाटली सोबत ठेवा.
- ओआरएस, घरी बनविलेली लस्सी, लिंबूपाणी, ताक इ. प्यावे.
- रात्रीच्या वेळेस घराच्या खिडक्या उघड्या ठेवा.
- आपले घर थंड ठेवण्यासाठी पडदे व सनशेड बसवा.
- पंख्याचा वापर करा तसेच थंड पाण्याने आंघोळ करा.

हे करु नका

- दुपारी १२ ते ३ शक्यतो बाहेर जाणे अथवा फिरणे टाळा.
- मद्यसेवन, चहा, कॉफी व शीतपेय पिणे टाळा. त्यामुळे डिहायड्रेट होते.

उष्माघाताची लक्षणे

- शरीराचे तापमान ४० अंशाच्या पुढे जाणे.
- डोकेदुखी व धडधड जाणवणे.
- चक्कर, मळमळ व उलट्या होणे.
- उष्णता असूनही घाम न येणे.
- स्नायू दुखणे व गोळे येणे.
- हृदयाचे ठोके जलद पडणे.
- मनाचा गोंधळ उडणे.

PRO/11/Adv. 2017-18

Annexure : 10 a

servatories across the state have already recorded temperature above 40 degrees Celsius.

ing and then build a robot to provide solution.

"We received a total of 331

cultural farms and an electronic money transfer system that uses fingerprint for transactions.

tellectual property laws. They will also be mentored in entrepreneurship," said Arya.

Congestion on port road eliminated: JNPT

Jams, days-long wait had resulted in truck drivers turning violent in 2015

EXPRESS NEWS SERVICE
MUMBAI, APRIL 6

THE JAWAHARLAL Nehru Port Trust (JNPT) has claimed to have eliminated traffic congestion on roads leading to its three terminals.

A source of constant frustration for drivers of trucks delivering cargo to the terminals, who have had to spend hours in queues waiting for their documents to be verified by port officers, the JNPT administration has said a number of measures have resulted in zero traffic congestion in the past nine months.

Massive traffic jams and days-long waiting period had resulted in truck drivers turning violent in November 2015, attacking port officers and policemen, and ransacking buildings.

Identifying long queues as a focus area, JNPT chairman Anil Diggikar said the submission of hard copies of documents at the entry gate has been stopped. "We have introduced e-forms and RFID tags, so now truck drivers submit their forms online. Each truck saves at least five minutes," he said.

The port has also created a traffic management team to regulate traffic, as the local police were not able to do it on their own.

The port also introduced what is called the inter-terminal movement, allowing trucks to return to processing areas without having to travel 7.5 km on the port road to exit.

Diggikar said this has led to a 8 per cent drop in congestion on the road and fuel savings of Rs 125 crore.

On Thursday, JNPT also published its figures for financial year 2016-17, recording a marginal increase in its operating income.

Its income was Rs 1,677.90 crore in the just-concluded year, compared to Rs 1,665.10 crore in the previous year.

Owing to an increase in fuel prices, its expenditure rose to Rs 788.49 crore, up 13 per cent from Rs 693.12 crore in 2015-16, said Neeraj Bansal, Deputy Chairman, JNPT.

In 2016-17, the port handled 4.50 million tonne equivalent units (TEUs) of container traffic, the highest since its inception. The port's own cargo terminal, the JNPCT, also logged a significant rise in cargo traffic the previous year, handling 1.53 million TEUs over 1.43 million TEUs in 2015-16.

Bansal said the first phase of the port's fourth terminal, which is being built in partnership with the Port of Singapore Authority, would be completed by December 2017, while the second phase is expected to be completed by 2023.

Each phase will increase the length of the berth by one km and is expected to add 2.4 million TEUs to the port's capacity.

Indian Express (Mumbai) 07-04-2017 MUMBAI P-5

LEAK DETECTION AND REPAIR (LDAR) PROGRAM

REPORT FOR THE MONTH OF FEBRUARY,2019

PLANT LEAK SUMMARY

Sr.No	Name of the Unit	Description	Component	Line Size	Location	Leak Type	Hydrocarbon Readings while Monitoring.Date 20/02/2019		Hydrocarbon Readings after attending leak (Attended on Date-28/02/2019)		Total Saving
							ppm	kg/day	ppm	kg/day	kg/day
1	ARU	70-EFC-504	Control Valve	3"	Control Valve	G and	12000	1.052	26	0.001	1.051
2	ARU	70-UFV-6202 Bypass I/V	Block Valve	3"	Isolation Valve	G and	15000	1.357	32	0.001	1.356
3	ARU	EFC-504 U/S I/V	Block Valve	4"	Isolation Valve	G and	10000	0.855	16	0.001	0.854

Verified by

Surekha Jamdar
Dy. Technical Manager

Checked by

Shraddha Kere
Technical Manager

Annexure - II

Annexture : 12

Sulfur Balance:

*This typical SO2 emission and contribution from individual elements would vary very marginally depending upon the unit operating levels, crude mix, etc.

TYPICAL SULFUR BALANCE OF THE EXISTING REFINERY		
INPUT	**Sulfur (MT/D)**	**%**
Crude Oil	357.45	99.6
R LNG	0	0
External Feed Stock	0	0
Intermediate Stock Depletion	1.60	0.4
	359.05	100.0
OUTPUT		
Products Light Ends	13.45	3.7
Products Heavy Ends	155.32	43.3
Elemental Sulfur	183.39	51.1
Refiner Fuel+ Loss	6.89	1.9
	359.05	100.0

Annexure: 13

CREP action points for oil refineries:

CREP Point	BPCL reply
A) Air Pollution Management	
All refineries located in the critically pollution areas, identified by CPCB, will submit an action plan for phase wise reduction of SO2 emissions. Future Refineries will have SRU with minimum 99 % efficiency. To enhance the efficiency of SRUs in the existing refineries, an expert committee will be constituted to look into the various aspects and suggest a road map	As per Consent to operate (Consent order no.: Formate 1.0/ BO/ CAC/-Cell/ UAN No. 0000004527, 0000009015/ 5th CAC/ dated 17th Jan-2018) received from Maharashtra Pollution control Board (MPCB). BPCL Mumbai Refinery has installed Sulfur Recovery Units for recovering sulfur from sour gases. In 2017, Tail Gas Treatment Units have been commissioned which has improved sulfur recovery efficiency to 99.99 %.
With regard to NOX emission, the new refinery/ process units will be installed to low NOx burners. For retrofitting of low NOx burners in existing units, the expert committee will suggest the strategies and action plan including NOx std.	All new process units have been equipped with Low NOx burners. Also ongoing Gasoline Treatment Unit (GTU) project (expected to be completed in Dec-2019), includes Low NOx burners. Status of GTU project: On 18th Oct-2018, Consent to establish has been received and on 22nd April-2019, BPCL has applied for Consent to Operate (CTO) for this project.
The flare losses will be minimized and monitored regularly.	BPCL Mumbai Refinery has provided Flare recovery system where flare gases are recovered and treated in Fuel Gas treatment unit. After removing H2S, treated flare gases are diverted to fuel gas system for burning to furnace.
Refineries shall install CEMS for SOX, NOX in major stacks with proper calibration facilities	As per CPCB guideline, all refinery stacks have been provided with Sox, NOx, CO and SPM analyzers with proper calibration facilities. Stack analyzer details are continuously transmitted to CPCB/ MPCB server. Also as per recent CPCB direction, dynamic limits have been incorporated for mixed fuel fired furnace.
Refineries will also monitor total HC and benzene in the premises (particularly at Loading-Unloading operations and ETP).	Ambient air quality monitoring is carried out on regular basis through MOEF approved and NABL accredited third party M/s Netel India Ltd. Reports of AMS monitoring are submitted to MPCB office every month.
B) Waste water management	
Refineries will prepare action plan for conservation of water resources and maximize reuse recycling of treated effluent. The treated effluent discharge (excluding once through cooling tower) will be limited to 0.4 m3/ tone (for 90 % of time) except for the season.	BPCL Mumbai Refinery is "Zero Liquid discharge" refinery and process water is treated in Effluent Treatment Plant (ETP). Treated water is reused in process cooling towers. Analyzers for monitoring BOD, COD, TSS & PH at ETP outlet have been provided with provision of continuous data transmission to CPCB/ MPCB.
Oil spill response facilities at coastal refineries will be in position. To facilitate this MoEF will coordinate with Coast Guards, Port Trust and departments.	———
Solid waste management	
Refineries will explore new technologies for	At BPCL MR, oily sludge is processed for oil

reduction in the generation of oils sludge strategy.	recovery with the help of third party contract M/s Plantek and processed sludge after oil recovery, is treated with bioremediation process using oil zapper bacteria. For carrying out bioremediation process, BPCL has an agreement M/s OTBL.
The petroleum coke having high sulfur content will be sold to/ reused by organized industries (having consent from SPCB) which have system to control SO2 emissions.	----------

Annexure: 14

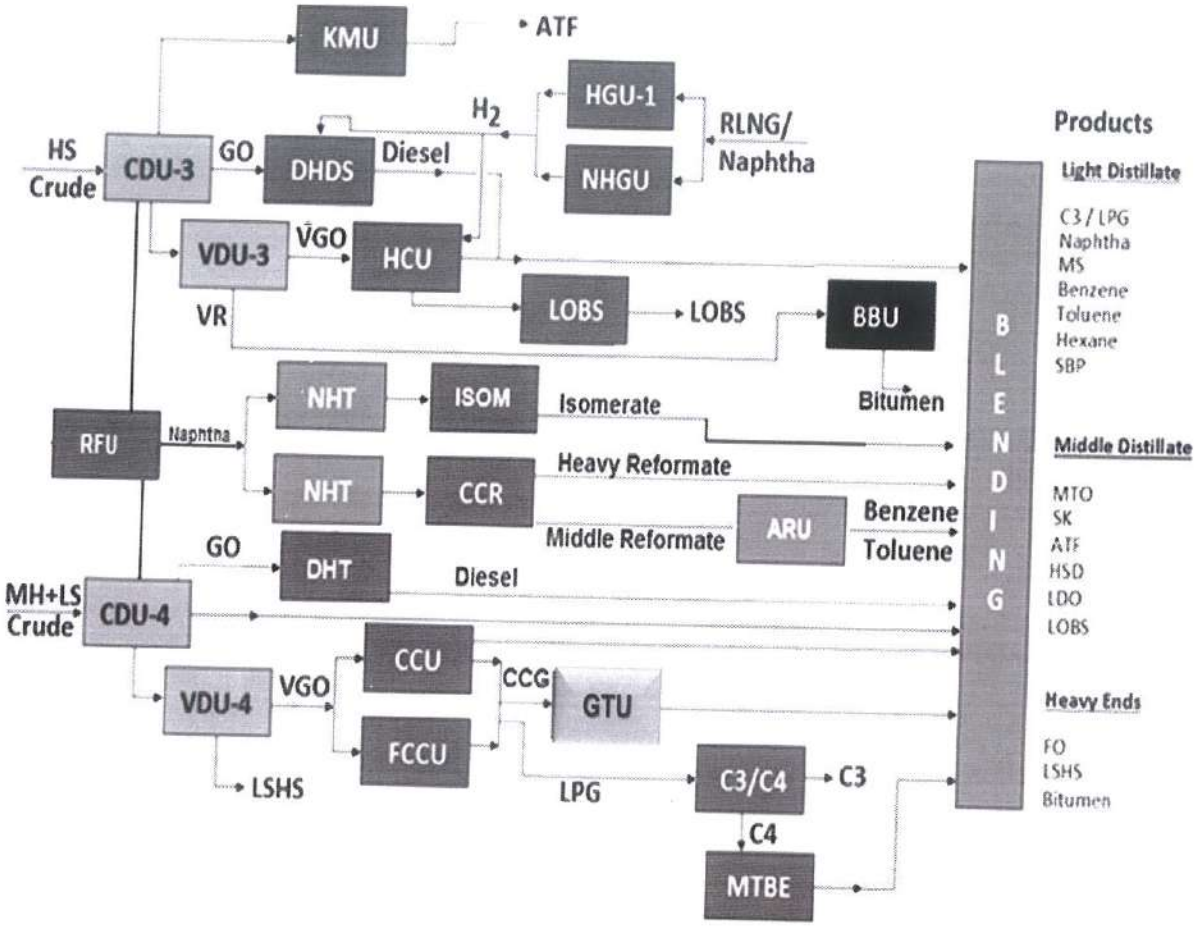
Sea water intake details for 2018-19:

The details of sea water intake are mentioned below:

Months	Sea Water intake
Apr-17	1957800
May-17	2238600
Jun-17	3112200
Jul-17	2553200
Aug-17	3130400
Sep-17	2714400
Oct-17	3884400
Nov-17	3507400
Dec-17	3837600
Jan-18	2964000
Feb-18	2223000
Mar-18	2730000
Total	34853000

Annexure : 15

Refinery configuration and Product portfolio:



Annexure: 16

Environment Clearance details:

UNIT	Date of EC Received	Date for EC advt.	Date on Unit Commissioned	EC details
CCR	7th June-2013	13th June- 2013	Mar-14	F. No. J-11011/180/2008-IA II(I), DATED 28/4/2008
CDU/VDU-4	12th June-2013	18th June-2013	Dec-15	F. No.J-11011/140/2012-IA II (I) DATED 12/06/2013
CRU to ISOM	8th Aug-2014	3rd Sept-2014	Feb-17	F. No. J-11011/270/2013-IA II (I) DATED 8/08/2014
DHT	13thAug-2015	25th Aug-2015	Jun-17	F. No. J-11011/21/2013-IA II (I) DATED 13/08/2015
GTU	20th Mar-2017	07th April-2017	Received consent to establish on 18th Oct2018. At present, project work is in progress.	F.No. J-11011/98/2016-IA-II(I) DATED20/03/2017

Annexure : 17

PRELIMINARY INFORMATION REGARDING FIRE IN HYDROCRACKER UNIT OF BPCL'S MUMBAI REFINERY

At about 1445 hrs on 8th August, 2018, a leak was observed in the reactor effluent air fin cooler section of Hydrocracker unit. Immediately depressurization was started. At about 1450 hrs fire broke out in that area. By 1530 hrs, the fire was brought under control. There were no fatalities or any burn injuries. People who sustained minor injuries are being treated in nearby hospital.

The fire is being allowed to burn out on a controlled manner. Hydrocracker unit is shutdown and other units are normal.

Regards

P.V Ravitej 8-8-2018

PV RAVITEJ
CGM (OPERATIONS), MR

Annexure: 18

Monitoring Report: DATA SHEET

1.	Project type: River - valley/ Mining / Industry / Thermal / Nuclear / Other (specify)		:	**Industry**
2.	Name of the project		:	CCR, CDU-4, ISOM, DHT, GTU
3.	Clearance letter (s) / OM No. and Date		:	**CCR**: F. No. J-11011/180/2008-IA II(I), DATED 28/4/2008 **CDU-4:** F. No.J-11011/140/2012- IA II (I) DATED 12/06/2013 **ISOM**: F. No. J-11011/270/2013-IA II (I) DATED 8/08/2014 **DHT**: F. No. J-11011/21/2013-IA II (I) DATED 13/08/2015 **GTU**: F.No. J-11011/98/2016-IA-II(I) DATED20/03/2017
4.	Location			
	a.	District (S)	:	Mumbai
	b.	State (S)	:	Maharashtra.
	c.	Latitude/ Longitude	:	
5.	Address for correspondence		:	BPCL Mumbai Refinery, Mahulgaon, Chembur.
	a.	Address of Concerned Project Chief Engineer (with pin code & Telephone / telex / fax numbers	:	Mr. Nilesh Kandalkar, D. G. M. (E & E), BPCL Mumbai Refinery, Mahul, Chembur-400074 Telephone: 02225533173
	b.	Address of Executive Project: Engineer/Manager (with pin code/ Fax numbers)	:	-----
6.	Salient features		:	

	a.	of the project	:	**CCR**: For processing naptha feed and maximizing MS production by improving octane number as well as increasing processing capacity for BS V MS production **ISOMERIZATION**: Manufacturing BS V MS as well as producing food grade & Pharmaceutical grade Hexane. Simultaneously, SBP is produced through Isomerization unit. **DHT**: For producing BS VI grade diesel as a part of Auto Fuel Policy. **CDU-4**: It was installed in the place of OLD CDU units (i.e. OLD CDU units have been dismantled and this plot will be used for constructing PRFCCU project). Newly commissioned CDU-4 unit is an integration of CDU & VDU units with state of the art facilities. **GTU**: It will make BS VI grade MS as a part of Auto Fuel Policy (i.e. Government mandate for use of BS VI grade MS/ HSD from 1st April-2020). At present, project work is in progress and expected to be commissioned in Dec-2019.
	b.	of the environmental management plans	:	**CCR/ISOM**: Existing CRU unit was dismantled and CCR unit with new technologies was commissioned. It produces MS with improved octane number. Also, divided wall column is provided in ISOM unit that makes SBP and Hexane simultaneously, thus saving energy consumption. **DHT**: It reduces sulfur content from diesel product, thus reducing sulfur emissions from vehicular exhaust. **CDU-4:** It was installed in the place of OLD energy guzzler CDU units. CDU-4 unit has reduced SOX emissions from BPCL MR to 10.44 MT/D. Also specific energy consumption has been improved.

				GTU: It will reduce sulfur content from MS product, thus reducing sulfur emissions from vehicular exhaust.
7.	Breakup of the project area		:	
	a.	submergence area forest & non-forest	:	Not Applicable
	b.	Others	:	
8.	Breakup of the project affected Population with enumeration of Those losing houses/dwelling units Only agricultural land only, both Dwelling units & agricultural Land & landless labourers/artisan		:	Not Applicable.
	a.	SC, ST/Adivasis	:	Not Applicable
	b.	Others (Please indicate whether these Figures are based on any scientific And systematic survey carried out Or only provisional figures, it a Survey is carried out give details And years of survey)	:	Not Applicable
9.	Financial details		:	
	a.	Project cost as originally planned and subsequent revised estimates and the year of price reference.(In Cr.)	:	**CCR**: 1827, **CDU-4:** 1458, **ISOM**: 725, **DHT:** 1714
	b.	Allocation made for environ-mental management plans with item wise and year wise Break-up.	:	Please refer Annexure- 3.
	c.	Benefit cost ratio/Internal rate of Return and the year of assessment	:	Value / Year of assessment: **CCR:** 15.7 % / 2011, **CDU-4:** 15 % / 2012, **DHT**: 10.7 % / 2015, **ISOM**: 19.9 % / 2014.
	d.	Whether (c) includes the	:	--

		Cost of environmental management as shown in the above.		
	e.	Actual expenditure incurred on the project so far	:	115.23 Cr.
	f.	Actual expenditure incurred on the Environmental Management plans so far.	:	Please refer **Annexure-8**
10.	Forest land requirement			
	a.	The status of approval for diversion of forest land for non-forestry use	:	Not Applicable
	b.	The status of clearing felling	:	Not Applicable
	c.	The status of compensatory afforestation, if any	:	Not Applicable
	d.	Comments on the viability & sustainability of compensatory afforestation program in the light of actual field experience so far	:	Not Applicable
11.	The status of clear felling in Non-forest areas (such as submergence area of reservoir, approach roads), it any with quantitative information		:	Nil
12.	Status of construction		:	Consent to establish was received on 18th Oct-2018. At present, GTU project construction work is in progress.
	a.	Date of commencement (Actual and/or planned)	:	**GTU:** Year- 2017
	b.	Date of completion (Actual and/of planned)	:	Date of completion: Actual/ Planned: **CCR**: Mar-14/ Mar-12 **CDU/VDU-4**: Dec-15/ Dec-14 **ISOMERIZATION:** Feb-17/ Feb-2017

				DHT: June-17/ June-2017
13.	Reasons for the delay if the Project is yet to start		:	Not applicable.
14	Dates of site visits		:	
	a.	The dates on which the project was monitored by the Regional Office on previous Occasions, if any	:	-
	b.	Date of site visit for this monitoring report	:	3rd Oct-2018
15.	Details of correspondence with Project authorities for obtaining Action plans/information on Status of compliance to safeguards Other than the routine letters for Logistic support for site visits)		:	--
16.	(The first monitoring report may contain the details of all the Letters issued so far, but the Later reports may cover only the Letters issued subsequently.)		:	--