KR.PET.5.EC

31st May 2021

Ministry of Environment, Forests and Climate Change Regional Office (Southern Zone) Kendriya Sadan, 4th Floor, E&F Wings, 17th main road Koramangala –II Block, Bangalore – 560 034.

Kind Attn: Shri. E Thirunavukkarasu – Scientist D

Sub: HYCR of stipulated Environmental Conditions for the period October 2020 to March 2021.

Ref: MoEF&CC letter no. J-11011/26/2013-IA II (I) dated 12th May, 2015 granting Environmental Clearance for Propylene Derivatives Petrochemical Project (PDPP) by Bharat Petroleum Corporation Limited, Kochi Refinery, Ambalamugal, Ernakulam District, Kerala:

Respected Sir,

With reference to the above referred EC letter, please find enclosed the Half Yearly Compliance Report (HYCR) for the period 1st October 2020 to 31st March 2021 on various conditions laid down by MoEF&CC along with applicable annexures/updates.

Encl: Half yearly compliance report for the period October 2020 to March 2021

Thanking you, Very truly yours For BPCL Kochi Refinery

SREERAM A N

Chief General Manager (Project Technical & Petchem)

Copy to:

The Member Secretary (Industry –II)

पोस्ट वैग नं: 2, अम्वलमुगल - 682 302, एरणाकुलम ज़िला, केरल, दूरभापः 0484 - 2722061 - 69 फैक्सः 0484 - 2720961 / 2721094 पंजीकृत कार्यालयः भारत भवन, 4 & 6, क्रीमभॉय रोड, वेलार्ड इस्टेट, पी. वी. नं. 688 मुंवई - 400 001 Ministry of Environment, Forests and Climate Change (MoEF&CC) Indira Gandhi Paryavaran Bhavan, Jorbagh Road, New Delhi, 110003

- The Member Secretary
 Central Pollution Control Board
 Parivesh Bhawan, CBD-cum-Office Complex
 East Arjun Nagar
 Delhi 110 032.
- The Member Secretary
 Kerala Pollution Control Board
 Plamoodu Junction
 Pattom (PO),
 Thiruvananthapuram 695 004
- The Environmental Engineer,
 Kerala State Pollution Control Board
 District Office -2, Perumbavoor, Ernakulam.

Note: As per directive from Ministry of Environment Forest & Climate Change (MOEF&CC) siting notification published in Extraordinary Gazette No: 5845 dated 28th November 2018, regarding amendment to the EIA notification of 2006, <u>hard copies of attached HYCR is not being submitted and only soft copies are being submitted via email</u>.

## P P I		=:			_		S.No.as per Env.Ltr.No. J-11011/26/2013-IA-II I), Dtd.: 12/05/2015
 The emission standards prescribed by the MoEF under Environment (Protection) Act for petrochemical industry shall be strictly followed. At no time, the emission levels shall		Continuous on-line stack monitoring for SO ₂ NO _X and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.			M/s BPCL shall comply with new standards/norms for Oil Refinery Industry and petrochemical industry notified under the Environment (Protection) Rules, 1986.	SPECIFIC CONDITIONS	COMMENTS
There are no fired process heaters /fired boilers in the PDPP Project. Two (2) Nos. of waste incinerators installed in the facility are designed to consume clean fuels like vaporized LPG/LNG.	Stack analyzers are commissioned, calibrated and ensured to be in working condition, Continuous on-line stack monitoring is ensured.	There are no fired heaters or fired boilers in the project facility, Waste Incinerators installed in the complex are having low NO _x burners.	Stabilization& continuous operation of the complex is targeted to be achieved in a phased manner during the period June - Aug 2021.	The facility is currently understartup phase, two process units have started operation, continuous run and stabilization is yet to achieve, and third process unit startup is planned during June 2021.	The project / facility is complying with applicable standards and norms for Oil Refinery Industry and petrochemical industry notified under the Environment (Protection) Rules, 1986.	ONDITIONS	Compliance Status

The fuel for firing in Incinerators is vaporized LPG/LNG having very low sulfur content.	v Total SO ₂ emissions after implementation of PDPP including IREP SHALL NOT EXCEED	
Hydrocarbon, toxic gases and VOC detectors are installed in the complex. Total number of 351 gas detectors and 8 VOC detectors are available in the complex.		
from the complex. 1. Sealless canned pumps are installed in organic liquid services 2. Special gland packing material provided in valves to reduce fugitive VOC emissions from glands.		
	yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be	
THE MEDICAL	seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive	
Detailed leak detection and repair program for monitoring and repair of VOC leak points, leak detection and repair survey are already identified; the frequency of monitoring of leaks and schedule of repairs of leak will be as per CPCB guidelines for LDAR program/OISD 224 guidelines.		
_	iv Took Deposition and Deposition an	
	not be restarted until the control measures are rectified to achieve the desired efficiency. Stack emissions shall be monitored regularly.	
The incinerators are operatingcomplying with the prescribed emission standards. Stack emissions are also monitored regularly.	go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall	

Ambient air quality data monitoring has started from new AAQMS installed in the complex along with existing AAQMS stations available around the refinery. Air quality is ensured to be complying with NAAQES standards.	Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry on 16 th 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.	¥
The same is being connected to display board which is positioned facing PWD (public) road for visibility.		
Continuous monitoring is ensured. Air quality is ensured to be complying with NAAQES standards.	down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	
One AAQMS STATION for continuous monitoring of SO2, NO-NO2, NOX,NH3,CO,OZONE,HC,H2S,MERCAPTAN,BTX,VOC,PM 10 (SPM), PM 2.5 (RSPM) and meteorological data etc.is already installed and powered ON at the location approved by Kerala State Pollution Control Board.	Ambient air quality monitoring stations (PM ₁₀ ,PM _{2.5} ,SO ₂ , NO _x , H ₂ S, mercaptan, nonmethane-HC and Benzene) shall be set up in the complex in consultation with Kerala State Pollution Control Board, based on occurrence of maximum ground level concentration and	<u>s</u> i
Photo ionization detectors (fixed VOC meters) installed at eight (8) important locations in and around the PDPP units/other facilities for continuous monitoring of VOCs. These detector readings are being monitored and generation of alarm is configured in case of detection at ppm level.	Continuous monitoring system for VOCs at all important places/areas shall be ensured. When monitoring results indicate above the permissible limits, effective measures shall be taken immediately.	≤.
The SO2 emissions after implementation of PDPP including IREP is not exceeding 1561.4 kg/hr.		
	1561.4 Kg/hr.	

¥.	≚.	*	≅.
Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage	Industrial effluent shall be treated in the effluent treatment plant. Treated effluent shall be recycled/reused in the existing cooling tower. As proposed, high COD effluent shall be incinerated. Water quality of treated effluent shall be monitored regularly. Online water monitoring system shall be installed for important parameters.	Total fresh water requirement from Kochi Refinery for PDPP shall not exceed 493 m³/hr and prior permission shall be obtained from the concerned agency. No ground water shall be used.	The gaseous emission 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.
Oil catchers/oil traps provided at necessary locations. Also rain /storm water outlet from each area is routed to retention pond, where	Industrial effluents are incinerated or treated in ETP before final disposal through existing outlets. Also online water monitoring facility available at existing refinery effluent outlet.	The total fresh water requirement will be less than 493 m³/hr which is within the total sanctioned quantity of 3083.3 m³/hr for integrated refinery complex by Govt. of Kerala. The actual consumption for the complex is within the limit, complete compliance data will be available after stabilization of the facility, when units operate at design capacity.	Complied. Gaseous emissions from DG sets are designed to be dispersed through stack heights as per CPCB standards. Acoustic enclosure is installed for DG set.

	system inside the factory premises.	quality of water is applicad and applications
		quality of water is allalyzed and ensured before routing to outlet.
¥ii	Incinerator designed shall be as per CPCB guidelines.	Two numbers of incinerators installed within the PDPP complex ensure final effluent /emission quality as per CPCB guidelines.
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.	Disposal of Hazardous waste ensured complying to hazardous waste rules 2008.
Xv	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Oil spillage prevention is taken care at the design stage itself. adequate facilities are maintained to prevent and contain oil spillage / storm water contamination for PDPP complex
X _V .	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Complied to the points mentioned in CREP that is applicable for PDPP project
xvii	To prevent fire and explosion of oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation	PDPP facility is designed as per OISD &PESO guidelines and the facilities satisfy separation distances as specified by OISD standards 118 /other applicable and relevant conditions of Potrology 2015

ines shall vision of ant made meeting shall be sordingly
ety guidelines shall lingly, provision of

	3			
=:			XX	X.
No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment &Forests. In case of	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.	GENERAL CONDITIONS	Provision shall be made for the housing of construction labor 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.	Green belt shall be developed at least in 40 acres of land in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Thick greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.
t Complied.	BPCL-KR is adhering to the stipulations made by KSPCB, State Govt. and other statutory bodies. Consent to Operate obtained from KERALA -SPCB Consent No: PCB/HO/EKM-2/ICO/09/2019 - Dated 20-08-2019	ADITIONS	All necessary infrastructures, labor camps, medical facilities arranged during construction, precommissioning activities.	Green belt development completed for the project. Details are attached as Annexure 2.

Kerala Factories and Boilers had accorded permit to construct the facility vide. Permit number 109/2019Doc No.T3/10811/2019/F&B/R Dis, Dated 08-05-2019		
PESO License for storage was obtained as applicable under Storage License numbers P/HQ/KL/15/1336 (P485172) & P/HQ/KL/15/1337 (P485168).		
Process units commissioning approval obtained from PESO vide following letters, P 5(2)496 /Refinery II dated 04-08-2020, P 5(2)496 /Refinery II dated 16-12-2020, and P 5(2) 496 /Refinery II dated 28-01-2020		
PESO prior approval was obtained for overall plot plan, overall area classification, fire water layout, equipment layout of individual facilities inside the complex vide. Letter P 5(2)496 /Refinery - dated 07-12-2016	applicable.	
For PDPP project, BPCL-KR has obtained all necessary approvals from Kerala Factories& Boilers, Chief Controller of Explosives, Fire Safety Inspectorate etc. wherever required. BPCL-KR will comply with the rules and regulations under manufacture, Storage and import of Hazardous Chemical Rules, 2000.	The project authorities must strictly comply with the rules and regulations 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	≣∷
	trom 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.	

≤.	<	₹	
Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall	A separate Environmental Management Cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	
BPCL-KR has earmarked adequate funds for environment pollution control measures. The funds are utilized / planned for installing, operating and maintaining	BPCL-KR is having a separate Environment Management section to carry out environmental management and monitoring functions. We have well equipped Centralized Quality Control Laboratory for PDPP project related monitoring activities.	The overall noise level are limited at the fence as prescribed under EPA rules/ SPCB advisory. Noise control measures including acoustic hoods and silencers, enclosures on all sources of noise generation are installed as per design of the facility. Regular monitoring of Noise levels at boundary areas conducted by dedicated team to ensure the same.	After completion, Factory license was amended by Kerala Factories and Boilers including PDPP project facilities. Amendment of factory license including PDPP project, Permit No.109/2019; Amendment letter dated 16-Sept-2020. NOC was obtained from Kerala Fire and Rescue department for the facility.D1-7904/2016 - Dtd.14.12.2018 from Regional fire office Ernakulam, Kerala.

BPCL-KR has complied with this condition. Copies of clearance letter was sent to all local bodies.	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.	¥
Six monthly compliance reports being submitted by BPCL-KR at stipulated interval.	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 shall be submitted to them regularly.	≤ ::
 LDAR program for operation phase of the complex. Greenbelt development and maintenance activities are also ensured. 		
Conventional and Submerged type, liquid and gaseous waste incinerators online to meet final effluent quality. AAQMS station and monitoring facilities online VOC meters for continuous monitoring of	be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.	

×.	×	₹
The environmental statement for each financial year ending 31 st March in Form-V as is mandated	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.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of CPCB and the SPCB. The criteria pollutant levels namely; PM10, PM2.5, SO2, NOx, HC (Methane of Nonmethane), 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.
BPCL-KR will comply. Environment statement will be submitted	Six monthly compliance reports were submitted by BPCL-KR after receipt of the Environmental Clearance for the PDPP project. The same was sent to the Regional Office of MoEF&CC and uploaded in the BPCL website.	Six monthly compliance reports being submitted without fail by BPCL-KR after receipt of the Environmental Clearance for the PDPP project. The same being sent to the Regional Office of MoEFCC and also uploaded in the BPCL website. The criteria pollutant levels namely: PM10, PM2.5, SO2, NOx, HC, VOCs being monitored utilizing a combination of 350 Nos. of HC/Hydrogen /other detectors installed and continuously monitored in the complex. 8 Nos. of Photo ionization detectors installed for continuous VOC detection AAQMS station at location approved by KSPCB. Display of ambient air quality at a convenient location near the main gate of the company in the public domain is being arranged before continuous run of facility is established.

to be submitted by the Project proponent to the concerned State Pollution Conntrol 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. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the Clearance by the Ministry of Environment and Forests at http://envfor.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 the copy of the same shall be forwarded to the Regional Office. Xiii Project authorities shall inform the Regional Office authorities and the date of financial closure and final approval of the project by the Currently the project is startup phase.			ADMINISTRAÇÃO A SALVA REPLAÇÃO A CARA COMPANSA COMPANSA A CARA COMPANSA COMPANSA A CARA COMPANSA
once, facility operation is stabilized to generate operating data. BPCL-KR has complied with this condition. Investment clearance from Board obtained on 03.12 land development started subsequently. Currently the project is startup phase.			to be submit concerned { prescribed u Rules, 1986, also be put o with the stat conditions an Regional Office
once, facility operation is stabilized to generate con operating data. BPCL-KR has complied with this condition. BPCL-KR has complied with this condition. Currently the project is startup phase.	rities shall inform the Regional Office the Ministry, the date of financial final approval of the project by the authorities and the date of the land development work.	proponent shall inform the public that has been accorded environmentally the Ministry and copies of the ter are available with the SPCB and seen at website of the Ministry of and Forests at http:/envfor.nic.in.e. advertised within seven days from sue of the clearance letter, at least in spapers that are widely circulated in which one shall be in the vernacular the locality concerned and the copy shall be forwarded to the Regional	tted by the Project proponent to the State Pollution Control Board as under the Environment (Protection), as amended subsequently, shall on the website of the company along tus of compliance of environmental and shall also be sent to the respective ices of the MOEF by e-mail.
	Investment clearance from Board obtained on 03.12.2014 and land development started subsequently. Currently the project is startup phase.	BPCL-KR has complied with this condition.	ration is stabilized to

Enterprise Social Commitment (ESC)- Schemes completed/under progress Propylene Derivatives Petrochemical Project (PDPP) - BPCL Kochi Refinery Status as on April 2021

Area of spending	Schemes	Amount (Rs. Crore)	Remarks
Infrastructure Development	Construction of road to residential area near PDPP and rerouting the canal	25.15	Completed
	Rejuvenation of Ponds and canals near refinery/PDPP site	0.73	Continues
	Rural road development (near refinery/PDPP site)	2.36	Continues
	Support for indoor stadium for local public at Kunnathunadu Grama panchayat	0.39	Continues
	Support for the construction of crematorium in Poothrikka Grama Panchayat	0.50	Continues
	Setting up of Cyber Dome for social media and internet monitoring at Kochi by Kerala Police	1.00	Completed
	Support for construction of new building for Library in Thiruvaniyoor Grama Panchayat	0.23	In progress
	Rehabilitation of residents (Urban Poor) at Vennalappara	0.57	Continues
Health, Nutrition & Hygiene	COVID related sanitization works in the area and related jobs	0.17	Completed
	Provision of food and provisions for nearby areas and colonies during lock down period	0.20	Completed
	Medical camp at various locations	0.08	Completed
	Construction of toilets in schools in Thiruvaniyoor Grama Panchayat	0.60	Completed
	Swachh Vidyalaya in Vadavucode Puthencruz Grama Panchayat	0.56	Completed
	Swachh Vidyalaya in Tripunithura Municipality	0.27	Continues
Education	Construction of new school building for Irumpanam Lower Primary Schools - Tripunithura Municipality	0.39	Continues.
	Vidyadhanamproj - one time scholarship scheme for children of Kochi city	0.50	Completed
	Infrastructure development at Govt Schools	0.28	Completed
kill levelopment	Safety Training vehicle for Factories & Boilers (to create safety awareness among children and industrial workers)	0.68	Continues.
	Total	34.66	

ANNEXURE -2

Green Belt Development compliance status

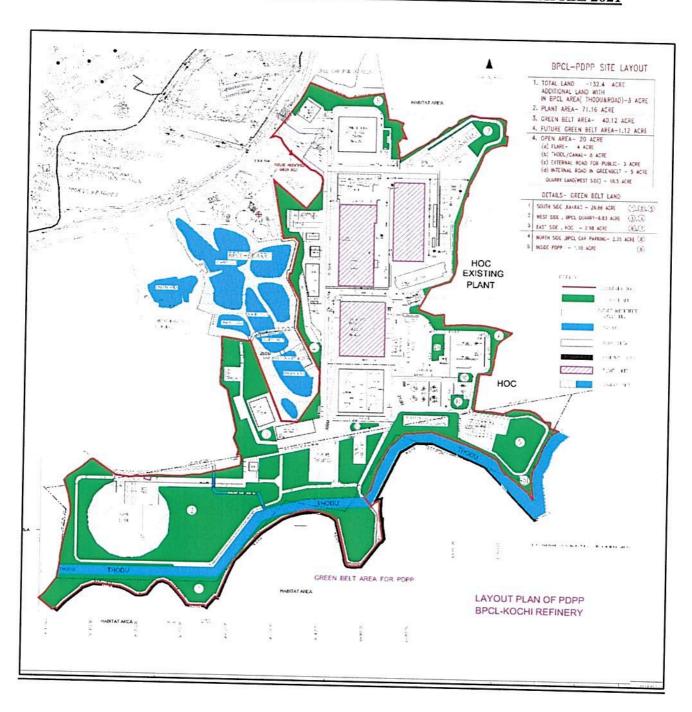
As per the EC conditions, Green belt to be developed at least in 40 Acres of land in and around the plant premises. The latest compliance status of Green belt development – PDPP Project is provided below.

Green Belt details		Status (April 2021)		
Green belt area requirement		Specific condition xxi of EC clearance letter- 40 Acres		
Green belt compliance status		40 Acres greenbelt development was completed on 31.03.2021.		
Details of plantations		Total saplings: 25768 Nos. of saplings		
Details of plant species		Identified in consultation with Dr. Induchoodan, Retd. Deputy Conservator of Forests at Kerala forest Department		
SL. No	Year (FY)	No. of trees survived	Area of green belt developed	
1	2017-2018	510	0.91 ACRES	
2	2018-2019	2519	1.84 ACRES	
3	2019-2020	697	1.33 ACRES	
4	2020-2021	22042	36.02 ACRES	
FOTAL		25768	40.1 ACRES	

Note:

- Miyawaki forests being developed in selected locations of PDPP greenbelt in a total of 65
 Cents of land for the faster and denser development of green belt.
- Areas marked in green shades plantation is completed by 31st March 2021.(40 Acres)

GREEN BELT DEVELOPMENT AREA MARKED IN LAYOUT - APRIL 2021



PHOTOPGRAPHS OF GREENBELT DEVELOPMENT (MARCH -2021)



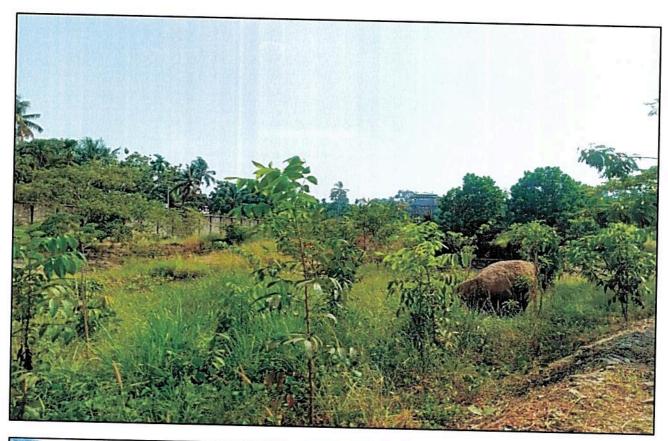


Page 3 of 6





Page 4 of 6





Page 5 of 6

