

Petronet LNG Limited

GIDC Industrial Estate, Plot No. 7/A, Dahei. Taluka: Vagra, Dist. Bharuch (Gujarat) - 392130 (India)

Tel.: 02641 - 670200 / 257 www.petroneting.com CIN: L74899DL 1998PLCO93073 GST No.: 24AAACP8148D1ZM

REF: PLL/DHJ/HSE/MoEF/2021/05

Date: 10th July, 2021

To.

The Director (Environment) Forests & Environment Department, Government of Gujarat, Block No. 14, 8th Floor, Sachivalaya, Gandhinagar - 382 010 (Fax No.: 079-23252156)

Subject: Half-yearly Compliance Report with respect to conditions stipulated by Ministry of Environment

& Forests, Govt. of India and Department of Forests, Govt. of Gujarat for Installation of Terminal facilities to handle additional 10 MMTPA of LNG (Phase IIIA & Phase IIIB) at PLL

Dahej, Gujarat by Petronet LNG Limited, Gujarat as on 30th June 2021

: (a) F. No. 11-63/2011-IA-III Dated 26th February, 2014 Ref

(b) ENV-10-2013-71-E Dated 13th January, 2014 (c) F. No. 11-63/2011-IA-III Dated 04th Dec, 2020

Dear Sir,

The half yearly compliance report as on 30th June 2021 with respect to conditions stipulated by Ministry of Environment & Forests, Govt. of India and Department of Forests, Govt. of Gujarat for Installation of Terminal facilities to handle additional 10 MMTPA of LNG (Phase IIIA & Phase IIIB) at Petronet LNG Limited, Gujarat is enclosed.

Thanking you, Yours faithfully,

For Petronet LNG Limited

S B Singh ED (Plant Head

S B Singh ED (Plant Head)

Petronet LNG Limited, Encl.: As about Dahej Terminal-392130

Copy to:-Director,

Ministry of Env., Forest and Climate Change Indira Paryavaran Bhawan, Jorbagh Road,

New Delhi - 110 003

Unit Head - Bharuch Division Gujarat Pollution Control Board Paryavaran Bhavan, Sector-10 A GANDHINAGAR - 382 010 (Gujarat) Deputy Director General of Forests (C), Ministry of Env., Forest and Climate Change Regional Office, Western Region, E-5, Kendriya Paryavaran Bhavan, Link Road No. 3, Bhopal - 462 016

Regional Officer Gujarat Pollution Control Board C-1\119\3, GIDC, Phase - 2, Narmadanagar Bharuch - 392015 (Gujarat)

Tel.: 0484-2502268

HALF YEARLY COMPLIANCE REPORT TO THE CONDITION MENTIONED IN MOE&F LETTER NO. F.No.11-63/2011-IA-III, DATED: 26th February, 2014

&

LETTER NO. F.No.11-63/2011-IA-III DATED 04TH December 2020

(For Phase III Expansion) AS ON 30.06.2021

Point-wise compliance statement for the subject environmental clearance is as below:

	CONDITIONS	STATUS
7.	Special Conditions:	
i)	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.	Complied. "Consent for Establishment" was obtained from GPCB vide their letter no. GPCB/BRCH/B-CCA611(2)/ ID-15479/222771 Dated 21.08.2014 and provisional order obtained for validity extension
ii)	All the recommendations and conditions stipulated by the Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2013-71-E dated 13.01.2014, shall be strictly complied with.	Complied and detail of compliance attach as Annexure-I.
iii)	The facility shall be constructed in accordance with the NFPA 59 A- Standard for the Production, storage and handling of liquefied Natural gas, OISD-194- Standard for Storage and handling of LNG, EN 1473 - Installation and equipment for LNG - Design of onshore installations and M.B.Lal Committee report.	Complied. The facilities designed and constructed as per NFPA59A, OISD 194,EN1473 and M B lal committee recommendation are incorporated. Attached Annexure IV Engineering design basis document for your reference The construction and commissioning of the Phase-IIIA facilities at Dahej completed and is operational since October, 2016 and Phase-IIIB1 Regasification facility at Dahej completed and is operational since June, 2019.
iv)	Precautionary measures shall be put in place to prevent leakage of LNG due to any disasters including tidal/ tsunami wave, seismic and other natural calamities. Disaster Management Plan shall put in place to manage emergencies.	Complied. The terminal is designed considering all the specified factors for safe operations. Existing Disaster Management Plan is updated accordingly. ERDMP plan is approved from DMI, Bhopal and valid till 29.12.2022

Page 1 of 9

		Attached Annexure V for DMI ERDMP certificate for your reference.
v)	Oil Spill Contingency Management Plan shall be put in place.	Complied. Oil spill contingency plan, is available.
vi)	Online sensor for load monitoring shall be provided, as committed.	Complied. Online stack monitoring instrument are installed for gas turbine stacks.
vii)	Temperature sensors, gas detectors, spill detectors shall be installed to take care of any type of spillage or leakage of the gas from the plant and the trucks.	Complied. These sensors placed as per design and as per F & G Mapping study for instandetection of any leakage in Phase-IIIA & Phase-IIIB1 Regasification Project. Attached Annexure VI F&G Study report Index page for your reference.
viii)	Project proponent shall explore training the local population with the help of training institutes like ITI etc, to make them suitable for employment in the facility.	Complied Petronet is working continuously for skill development of local people. PLL has recruited fair number of local people. For ancillary and support functions as security services, fire fighting and green belt maintenance etc. PLL is giving preference to local people.
ix)	All the recommendation of the EMP, Risk Assessment and Disaster Management Plan shall be complied within letter and spirit. All the mitigation measures submitted in the EMP/DMP report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MOEF along with half yearly compliance report to MoEF-RO.	Complied ERDMP plan is updated and include Phase III expansion. All the recommendation of DMI, Bhopal are incorporated. ERDMP plan is approved from DMI, Bhopal and valid til 29.12.2022. Attached Annexure V for DMI ERDMP certificate for your reference.
x)	A separate Environment Monitoring Cell shall be set up especially for this plant and details shall be submitted to the Ministry prior to the commencement of operation.	Complied Environment Monitoring Cell is already set up in the existing plant and is being used for Environment Monitoring of expansion project and a brief report is being submitted to MoEF on half yearly basis. At Dahej site, Seven no HSE person are employed headed with Sr. Manager HSE

xi)	Construction activity shall be carried out strictly as per the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Complied Construction activities was done as per CRZ Notification 2011. The construction and commissioning of the Phase-IIIA facilities at Dahej completed and is operational since October, 2016 and Phase-IIIB1 Regasification facility at Dahej completed and is operational since June, 2019.
xii)	No construction work other than those permitted in Costal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Complied CRZ Notification followed during construction phase however The construction and commissioning of the Phase-IIIA facilities at Dahej completed and is operational since October, 2016 and Phase-IIIB1 Regasification facility at Dahej completed and is operational since June, 2019.
xiii)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied EMC is already setup in the company headed by Sr. Manager (HSE) and supported by six HSE members and it will be used for Environment Monitoring of expansion project.
xiv)	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Complied Funds earmarked for environment management plan is included in budget and being monitored regularly.
8.	General conditions:	
i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied No digging activity effected the ground water quality during the construction. Ground water samples are taken and being monitors regularly.
ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Complied Entry of GPCB and all government bodies are taken care for any inspection and all required information submitted as and when visited.

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iii)	A Six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Complied MoEF & CRZ Half yearly compliance report submitted regularly. Last July to December 2020 report submitted on 19.01.2021.
iv)	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Complied
v)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted. No Such case till date
vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Complied
vii)	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied Regional Office as well as the Ministry has been informed about the start of land development works vide our letter no. PLL/DHJ/MoEF/010 Dtd.12 th May, 2014.
viii)	A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	Complied The environment clearance was forwarded to concerned offices. A copy of inwards from such offices was submitted vide our letter no. PLL/DHJ/MoEF/011 Dt.13 th May, 2014.
ix)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.	Complied Copy of environment clearance was already forwarded to concerned offices.
9.	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and	Complied Mention Environment act and Rules are followed. PLI Policy renewed for one year w.e.t 02.06.21 Attached Annexure VIII for PLI policy
10.	rules made thereafter. All other statutory clearances such as the	Complied

	approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Applicable clearances from following authorities obtained, a copy of same was submitted vide our letter no. PLL/DHJ/MoEF/011 Dt.13 th May, 2014: 1. PESO in principle approval obtained vide letter dated 10/10/2012 [PV(WC)S-784/GJ-II] and letter Dt 19/03/2014[PV(WC)S-784/GJ-II]. 2. Forest Dept. Approval obtained vide letter dated 30/10/2013, No.FCA-1013/10-13/11/SF-31-F.
11.	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.	Complied A Public Notice was advertized in the local newspapers in English and Gujarati languages. A copy of same was submitted vide our letter no. PLL/DHJ/MoEF/011 Dtd.13 th May, 2014. Sandesh Gujarati newspaper dated 07.03.2014 and Times of India English Newspaper dated 07.03.2014 A copy of this notice is already forwarded to RO, Bhopal vide letter PLL/DHJ/MoEF/2014/007 dated 07.03.2014.
12.	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	Noted.
13.	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted. No Such case till date
14.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Complied Six monthly compliance are uploaded at company website www.petronetlng.com Attached Annexure IX for screen shot of website
15.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while	Complied Refer reply to 8 (viii). The Environment and CRZ Clearance is

	processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	already uploaded at company website www.petronetlng.com.
16.	The proponent shall upload the status of compliance of the stipulated 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 MoEF, the respective Zonal Office of CPCB and the SPCB	Complied. The Environment and CRZ Clearance compliance status is already uploaded at company website www.petronetlng.com . The monitored reports are regularly sent to MoEF RO, Bhopal with copy to GPCB & CPCB.
17.	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 Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail. Condition Mention in LETTER NO. F.No.11-63/20	Complied The Form-V is being updated on company website and sent to MoEF Regional Office by e-mail. Attached Annexure VII for Environment statement
6i	Marine ecological monitoring and its mitigation measures for protection of phytoplankton, zooplanktons, macrobenthos, estuaries, sea grass, algae, sea, weeds, crustacean, fishes mangroves and migratory birds etc. shall be undertaken through a reputed university/institute with financial support as desired. Six monthly report of the studies to be provided to the regional office of MoEFCC.	Noted and will be complied
7	The MoEFCC has considered the proposal based on the recommendation of the Expert Appraisal Committee and hereby decided to accord extension of validty of EC of aforementioned project issued by the Ministry vide letter No -11-63/2011-IA-III dated 26 th February 2014 for period of thre years i.e up to 25 th February 2024 under the EIA Notification 2006 as amended subject to strict compliance of all conditions specified in the EC letter and in addition to additional condition prescribed by the EAC.	

ANNEXURE-I

Compliance to conditions as conveyed by Department of Forests & Environment, Govt. of Gujarat, Letter No. ENV-10-2013-71-E dated 13th January, 2014 as on 30.06.2021

Point-wise compliance statement for the subject environmental clearance is as below:

SR. NO.	CONDITIONS	<u>STATUS</u>
1	The provisions of the CRZ notification of 2011 shall be strictly adhered to by the PLL	Complied CRZ Notification 2011 followed strictly.
2	PLL shall have to comply with all the Standards/norms prescribed by the Central Pollution Control Board for this project	Complied CPCB and GPCB norms are followed Monthly Environment monitoring done through GPCB approved agency and all measured parameters are under the limit. Attached Annexure II for Environment monitoring data
3	PLL shall have to revise the Emergency Preparedness plan in close coordination with District Authority prior to Commissioning of expansion project.	Complied ERDMP plan is updated and include Phase III expansion. All the recommendation of DMI, Bhopal are incorporated. ERDMP plan is approved from DMI, Bhopal and valid till 29.12.2022. Attached Annexure V for DMI ERDMP certificate for your reference.
4	All the recommendations and suggestions given by the VIMTA LABS in their Comprehensive Environment Management Plan shall be implemented strictly by the PLL	Complied. Company has adopted and followed best Environment Management practices to minimizing the impact on environment. Company has ISO 14001/9001/45001 certificate.

5	The construction debris and sewage generated during the construction phase shall not be discharged into the creek, sea, estuary or into the CRZ area. The debris shall be removed from the construction site immediately after the construction is over and shall be disposed off as per the guidance of the GPCB.	Complied No debris discharged into the creek, sea or into CRZ area during construction phase.
6	The construction camps shall be located outside the CRZ area and the construction labours shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours	Complied Construction camp set outside the CRZ area and all required welfare services are provided.
7	The groundwater shall not be tapped to meet with the water requirements during construction or operation phase in any case.	Complied Ground water was not used during the construction phase as well as operation phase.
8	A Disaster Management Plan to meet with any eventualities that may arise during construction and/or operation phase shall be prepared implemented.	Complied ERDMP plan is updated and include Phase III expansion All the recommendation of DMI, Bhopal are incorporated ERDMP plan is approved from DMI, Bhopal and valid till 29.12.2022. Attached Annexure V for DMI ERDMP certificate for your reference.
9	Necessary permissions/Clearances from different departments/ agencies under different laws/ acts shall be obtained before commencing any enabling activities.	Complied Applicable clearances from following authorities obtained a copy of same was submitted vide our letter not pleased. Dept. 13 May, 2014: 1. PESO in principal approval obtained vide letter dated 10/10/201 [PV(WC)S-784/GJ-II] and letter Dept. Approval obtained vide letter dated vide vide letter dated vide vide vide vide vide vide vide vi

		30/10/2013, No.FCA-1013/10- 13/11/SF-31-F.
10	A separate Environmental Cell with qualified personnel shall be created to implement the Environmental Management Plan and a separate budget shall be provided for this purpose.	Complied EMC is already setup in the company headed by Sr Manager (HSE) and supported by six HSE members and it will be used for Environment Monitoring of expansion project.
11	The cost of the external agency that may be appointed by this department for supervision / monitoring of the project activities during construction/ operational phases shall be borne by the PLL.	Noted. PLL agree to born cost of external agency appointed by this department
12	Massive greenbelt development program including the mangrove plantation in 100 ha. shall be carried out in consultation with the Gujarat Ecology Commission/ Forest Department by PLL.	Complied PLL has completed 100 ha. Mangrove Plantation in consultation with Forest Department.
13	A large scale socio-economic upliftment program in consultation with the District Collector/ DDO shall be carried out. A separate budget shall be provided for this purpose and details be furnished to this Department from time to time.	Complied. Please Refer Attached Annexure III for detail.
14	Environmental Audit report shall be submitted every year. The report shall also cover the change in the coastal and marine environment enroute the proposed rerouted pipeline and due to commissioning of the proposed activities.	Complied
15	A six monthly progress reports regarding the compliance of the conditions shall be submitted to this department.	Complied.
16	Any additional condition that may be imposed by the Ministry of Environment and Forests, Government of India/This department from time to time shall have to be complied with by the PLL	Complied No such case till date

ANNEXURE - II - ENVIROMENT DATA

AMBIENT AIR QUALITY STATUS REPORT

										All units a	All units are in µg/m³.
Sr.no.	Month	PN	PM10	Md	PM2.5	SS	SOx	ž	×ON	HC as Me	HC as Methane CH ₄
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Мах
	NAAQ norms	100 µg/m³	ıg/m³	d 09	60 µg/m³	80 µ	80 µg/m³	80 µ	80 µg/m³	Abs	Absent
-	Jan-21	64.00	94.00	21.00	36.00	09'6	18.60	11.60	21.30	BDL	BDL
2	Feb-21	62.00	96.00	18.00	34.00	9.80	18.60	11.60	22.80	BDL	BDL
3	Mar-21	72.00	97.00	22.00	48.00	9.80	18.40	12.40	22.40	BDL	BDL
4	Apr-21	74.00	96.00	22.00	34.00	10.20	18.70	12.30	21.40	BDL	BDL
5	May-21	72.00	96.00	21.00	36.00	10.60	21.10	13.10	24.10	BDL	BDL
9	Jun-21	66.00	88.00	18.00	33.00	10.60	18.40	14.60	22.60	BDL	BDL
7	Jul-21										
8	Aug-21										N N
6	Sep-21										
10	Oct-21						V and I v				
11	Nov-21										
12	Dec-21										
	Range (Jan-21 to June 21)	62-97	97	18-48	48	9.6-21.1	21.1	11.6-24.1	.24.1	BDL	٦,



STACK EMISSION AIR QUALITY STATUS REPORT

		r														
	×ON	50 ppm	27.20	19.60	16.40	17.60	21.40	onal GTGs							16.4-27.2	
СТС	×os.	100 ppm	BDL	BDL	BDL	BDL	BDL	Not monitored due to non operational GTGs							BDL	
	SPM	150 mg/NM ³	BDL	BDL	BDL	BDL	BDL	Not monitore							BDL	
	Month	GPCB norms	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Range (Jan-21 to June-21)	
(Sr.no.	5	-	2	ю	4	2	9	7	æ	6	10	11	12		

BDL: Below Detection Level.

Asmaul

NOISE LEVEL REPORT

20	Sr no	# 1	::	Jan-,	21	Feb-2'	2.1	Mar-2		Apr-21		May-2		Jun-21		Jul-21	Ā	Aug-21	Se	Sep-21	Oct-2'	-21	Nov-2	21	Dec-21
01:10	Localion	1		Ldey Lnight		Lday L	Lnight	Lday L	Lnight L	Ldny L	Lnight	Ldey L	Lnight Lo	Lday Lnight	üght Ldey	ey Lnight	ht Lday	Lnight	Lday	Lylaht	Lday	Lnight	Ldav	Luight	Lday L
1	North	decibel	Day-75 db Night-70db	99	56	64	45	99	58	88	56 6	64 5	54 6	68 5	26							_			
2	East	decibel		49	54	99	52	63	99	99	54	68	52 6	64 5	54										
3	West	decibel	Day-75 db Night-70db	11	55	89	58	64	55 6	62	28 G	99	55 6	62 5	28										
4	South	decibel	Day-75 db Night-70db	89	52	62	56	62 8	54	64	55 6	62 5	56 6	66 5	22										



GROUND WATER QUALITY STATUS REPORT

6		111111111111111111111111111111111111111	Mar-21	-21	Jun-21	-21	Sep-21	-21	Dec-21	-21
0H.70	Farametel		GW1	GW2	GW1	GW2	GW1	GW2	GW1	GW2
_	Temperature	ပ္	30	30	32	32				
2	PH	E.	8.7	8.74	8.11	8.23				
ю	Total Dissloved Solids (TDS)	mg/L	2780	2910	2910	2640				
4	Chlorides as CL	mg/L	614.8	595	629.8	419.8	15) 		
2	Sulphate as SO4	mg/L	112	555	222	463	5			
ဖ	BOD (5 days @ 20°C)	mg/L	BDL	BDL	4	4				
7	COD	mg/L	BDL	4.1	20.5	20.5				
<u>∞</u>	Oil & Grease	mg/L	BDL	BDL	BDL	BDL				
တ	Phenolic Compound	mg/L	BDL	BDL	BDL	BDL				
10	Zinc as Zn	mg/L	BDL	BDL	BDL	BDL				
11	Total Chromium as Cr+3	mg/L	BDL	BDL	BDL	BDL				
12	Lead as Pb	mg/L	BDL	BDL	BDL	BDL				
13	Cyanide as CN	mg/L	BDL	BDL	BDL	BDL				
14	Flouride as F	mg/L	3	3.45	2.1	2.35				
15	Copper as Cu	mg/L	BDL	BDL	BDL	BDL				
16	Insecticide	mg/L	Absent	Absent	Absent	Absent			211 1211	
17	Pesticide	mg/L	BDL	BDL	BDL	BDL				
18	Mercury as Hg	mg/L	BDL	BDL	BDL	BDL				
	ND*: Not detected									



MARINE WATER QUALITY STATUS REPORT

Temperature PH Color Total Suspended Solids Total Dissloved Solids (TDS) Chlorides as CL Sulphate as SO4 BOD (5 days @ 20°C) COD Oil & Grease Phenolic Compound Zinc as Zn Total Chromium as Cr+3 Lead as Pb Cyanide as CN Flouride as F Copper as Cu Insecticide Pesticide Mercury as Hg Hexavalent Chromium as Cr+6 Nickel as Ni	ů.	Parameter	: <u>t</u> u	Mar-21	Jun-21	Sep-21	Dec-21
Temperature +C 30 PH - 7.81 Color Co-pt 120 Total Suspended Solids mg/L 720 Total Dissloved Solids (TDS) mg/L 13740 Chlorides as CL mg/L 18744.1 Sulphate as SO4 mg/L 2640 BOD (5 days @ 20°C) mg/L 12 COD mg/L 42.5 Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L BDL Icad as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Copper as Cu mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L Absent Mercury as Hg mg/L Absent Mickel as Ni mg/L 0.091	5		5	MW	MW	MW	MW
PH - 7.81 Color Co-pt 120 Total Suspended Solids mg/L 720 Total Dissloved Solids (TDS) mg/L 720 Total Dissloved Solids (TDS) mg/L 18744.1 Sulphate as SO4 mg/L 2640 BOD (6 days @ 20°C) mg/L 42.5 COD mg/L BDL Phenolic Compound mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L BDL Lead as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L Absent Mercury as Hg mg/L Absent Mercury as Ni mg/L 0.081	_	Temperature	Ç	30	32		
Color Co-pt 120 Total Suspended Solids mg/L 720 Total Dissloved Solids (TDS) mg/L 18744.1 Chlorides as CL mg/L 2640 Sulphate as SO4 mg/L 2640 BOD (5 days @ 20°C) mg/L 42.5 COD mg/L 8DL COD mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L BDL Lead as Pb mg/L BDL Cyanide as Ch mg/L BDL Flouride as F mg/L N.D. Copper as Cu mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L Absent Hexavalent Chromium as Cr+6 mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L Absent Mercury as Ni mg/L Absent	2	Н	10%	7.81	7.58		
Total Suspended Solids mg/L 720 Total Dissloved Solids (TDS) mg/L 31240 Chlorides as CL mg/L 18744.1 Sulphate as SO4 mg/L 2640 BOD (5 days @ 20°C) mg/L 42.5 COD mg/L BDL Oil & Grease mg/L BDL Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L BDL Lead as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as CN mg/L BDL Flouride as Cu mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL	3	Color	Co-pt	120	80		
Total Dissloved Solids (TDS) mg/L 31240 Chlorides as CL mg/L 18744.1 Sulphate as SO4 mg/L 12 BOD (5 days @ 20°C) mg/L 42.5 COD mg/L BDL Oil & Grease mg/L BDL Oil & Grease mg/L BDL Dil & Grease mg/L BDL Zinc as Zn mg/L BDL Icad as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L BDL Copper as Cu mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Mickel as Ni mg/L BDL	4	Total Suspended Solids	mg/L	720	1500		
Chlorides as CL mg/L 18744.1 Sulphate as SO4 mg/L 2640 BOD (5 days @ 20°C) mg/L 42.5 COD mg/L BDL Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Zinc as Zn mg/L BDL Lead as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Mercury as Hg mg/L Absent Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L BDL	5	Total Dissloved Solids (TDS)	mg/L	31240	28410	6 0	
Sulphate as SO4 mg/L 2640 BOD (5 days @ 20°C) mg/L 12 COD mg/L 42.5 Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Zinc as Zn mg/L 0.067 Total Chromium as Cr+3 mg/L BDL Cyanide as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L BDL	9	Chlorides as CL	mg/L	18744.1	14392.7		
BOD (6 days @ 20°C) mg/L 42.5 COD mg/L 42.5 Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Zinc as Zn mg/L BDL Total Chromium as Cr+3 mg/L BDL Coyanide as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Copper as Cu mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	7	Sulphate as SO4	mg/L	2640	3613		
COD mg/L 42.5 Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Zinc as Zn mg/L 0.067 Lead as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L BDL Insecticide mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	ω	BOD (5 days @ 20°C)	mg/L	12	42		
Oil & Grease mg/L BDL Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Total Chromium as Cr+3 mg/L BDL Lead as Pb mg/L BDL Cyanide as CN mg/L BDL Flouride as F mg/L N.D. Copper as Cu mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	6	COD	mg/L	42.5	145.2		
Phenolic Compound mg/L BDL Zinc as Zn mg/L 0.067 Total Chromium as Cr+3 mg/L 0.051 Lead as Pb mg/L BDL Cyanide as CN mg/L 2.1 Flouride as F mg/L BDL Insecticide mg/L Absent Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	10	Oil & Grease	mg/L	BDL	BDL		
Zinc as Zn mg/L 0.067 Total Chromium as Cr+3 mg/L 0.051 Lead as Pb mg/L BDL Cyanide as CN mg/L 2.1 Flouride as F mg/L BDL Copper as Cu mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	11	Phenolic Compound	mg/L	BDL	BDL		
Total Chromium as Cr+3 mg/L 0.051 Lead as Pb mg/L BDL Cyanide as CN mg/L 2.1 Flouride as F mg/L BDL Copper as Cu mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 60.091	12	Zinc as Zn	mg/L	0.067	0.074		
Lead as Pb mg/L BDL Cyanide as CN mg/L 2.1 Flouride as F mg/L BDL Copper as Cu mg/L N.D. Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	13	Total Chromium as Cr+3	mg/L	0.051	0.063		
Cyanide as CN mg/L BDL Flouride as F mg/L 2.1 Copper as Cu mg/L BDL Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	14	Lead as Pb	mg/L	BDL	BDL		
Flouride as F mg/L 2.1 Copper as Cu mg/L BDL Insecticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	15	Cyanide as CN	mg/L	BDL	BDL		
Copper as Cu mg/L BDL Insecticide mg/L N.D. Pesticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	16	Flouride as F	mg/L	2.1	2.16		
Insecticide mg/L N.D. Pesticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	17	Copper as Cu	mg/L	BDL	BDL		
Pesticide mg/L Absent Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	18	Insecticide	mg/L	N.D.	N.D.		
Mercury as Hg mg/L BDL Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	19	Pesticide	mg/L	Absent	Absent		
Hexavalent Chromium as Cr+6 mg/L BDL Nickel as Ni mg/L 0.091	20	Mercury as Hg	mg/L	BDL	BDL		
Nickel as Ni mg/L 0.091	21	Hexavalent Chromium as Cr+6	mg/L	BDL	BDL		
	22	Nickel as Ni	mg/L	0.091	0.084		



ANNEXURE -III

CSR DETAILS

PLL has constructed a temple at the site for the local people and has contributed towards infrastructure in the area for roads and drinking water.

Community development and welfare measures are taken. Village Luwara has been jointly adopted along with another nearby industry, as directed by PCPIR Welfare Society. Separate fund allocated for CSR.

Some of the schemes completed/under progress are Health Center (construction & operation), drainage and provision of street lights at Village Luwara. Rupees 75 lakh contributed to PCPIR Welfare Society. Two ladies from Luwara village sponsored for nursing course at Vidhyadeep Community college, Bharuch. Sponsored construction of Sanitation scheme at village Muller. Active participation in other Government initiated community development programs.

Installed 10 nos. Emergency solar lighting at prominent places in village Luwara. Donated Rs.1 lac for Bharuch District Civic centre development. Participated in Govt. scheme on KanyaKelvani. Installation of drainage crossings to remove accumulated water at 4 locations within the village Luvara at a cost of Rs. 0.8 lacs. Construction of approach road in village Lakhigaon, Dahej.

PLL has sponsored 'Mataria Talav drinking water project' of the Bharuch Municipality Corporation. This project is for the supply of sweet drinking water from the Narmada River to the residents of Bharuch city. MD&CEO handed over cheque for Rs. 25 Lacs to the Collector, Bharuch on 13/06/2011 and further, PLL added Rs. 20 Lacs for the 'MatariaTalav drinking water project'

PLL installed 50 nos. Emergency solar lighting at prominent places in village Luwara& 10 nos. Emergency solar lighting at prominent places in village Lakhigam of Vagra Taluka in Bharuch District. Provided School Bus to Primary School at Lakhigam Village and also running Primary Health Center at Luvara Village. PLL constructed Bus-stand and extended Gram Panchayat Bhavan building at Luvara Village.

PLL installed 25 Nos. of Solar lights at prominent places in village Lakhigam and Luwara. Contributed Rs. 20 Lakhs in Akshay Patra mid-day meal scheme at villages in and around Dahej location. Also, contributed Rs. 10.00 Lakhs in Gujarat Lion Conservation Society towards procurement of Vehicle.

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Primary health services to Luvara village, Gynec health and Pulse Polio campaign (Pakhajan PHC). PLL supported noble cause of Construction of Storm water drainage at Shravan Chokdi to Jambusar by pass (over bridge) in Bharuch. This project is executed under District Collector office.

Request from CDHO (Chief District Health Officer) was received to participate in various health initiatives. PLL agreed during meeting with DM to provide the ambulance for PHC, Pakhajan Village of Vagra Taluka. PLL is supporting Luvara School for reference books, uniform, school picnic and creating awareness on environment, health, safety and security aspects through various programs regularly, rewarding bright students etc. PLL celebrated Shala Pravesh Utsav at Luvara School and distributed tool box to children.

Bharuch has problem of solid waste management and garbage disposal. To improve on cleanliness of the town, PLL is supporting initiative of GREEN BHARUCH CLEAN BHARUCH by donating two dumper placer worth Rs. 23.94 Lakh.

Due to delay in recruitment of teachers, primary schools in and around Dahej has 40% teaching staff. To support education by deploying young educated teachers, PLL sponsored 14 teachers in 4 schools of villages of Dahej, Lakhigam and Luvara.

PLL constructed 11hosues of homeless tribes in Luvara village at a cost of 25 Lakh. PLL initiated drive to make Luvara open defecation free by sponsoring toilets for 172 houses at a cost of Rs. 17.2 Lakh.

As a part of initiate for Swachh Bharat Abhiyan, PLL constructed five toilet blocks for school at Lakhigam, Luvara, Ambetha, Jageshwar & Dahej. Also, PLL has constructed 91 Toilet blocks at an estimated expenditure of Rs. 172 Lakhs for various schools in fifteen district of Assam in co-ordination with Rashtriya Madhiyamik Siksha Abhiyan (RMSA).

Cancer screening done (Pep and Breast) for female above 18 years at Luvara village. Establishment of equipment for Ultra Sonography Ward done at General/Civil Hospital, Bharuch. Motivational Awards (Academics and punctuality), School kit and reference books given for Luvara School students. Nutrition and clothing kit (105 nos.) was given to under nourished baby and mother.

PLL has sponsored Drawing competition, Educational tour and uniform distribution at Primary School Luvara. PLL sponsored Medical Equipment such as Eye sight testing, ECG Machine, Spirometer, Pulse Oxymeter etc. to Luvara Primary Health Centre. PLL also celebrated Swatch Bharat Pakhwada during 16th June, 2016 to 30th June, 2016 in co-ordination and consultation with neighboring villages, communities, schools etc.

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The launch of Project Vidhyagam was organized in Luwara Primary School wherein a classroom library for std. 7 & 8 students is setup. About 130 books (syllabus and general reading including comics, biographies, story books, general knowledge, science fiction in Gujarati, Hindi and English language) has been kept in the library. The idea behind this project is that students develop interest in reading and thus studying. The PLL Disha Ladies Club organized for food and distribution of educational kits for 65 girls in the Orphanage in Bharuch on 11th Sept 2016. A focused group discussion on importance of hygiene and cleanliness was organized by Ladies club members as well.

Roofing item worth Rs. 2 Lacs was provided to the Gram Panchayat Office of Luwara Village for construction of house for 10 tribal families living below the poverty line. This material consisted of cement roof, channel, and hooks. It is expected that the construction of houses will be done by mid-January 2017.

Petronet LNG Limited celebrated the World Sight Day on 13th October 2016 by organizing the Eye Screening Camp for contractual labor at the company premises. The camp was organized in association with Wockhardt Foundation and about 200 labor and 60 employees participated in the same. During the camp; 125 specs and 60 unit of drops were distributed to beneficiaries based on assessment by Doctors.

On the occasion of 147th birth anniversary of Father of Nation Shri Mahatma Gandhi Health and Hygiene talk, Swachhta Selfie Campaign, Drawing Competition at Govt. High School, Lakhigam and other activities were organized as part of Swachh Bharat Abhiyaan.

It is observed that there is a shortage of regular teachers in local schools and severely hampering the quality of education of poor children in schools. To mitigate this problem, PLL has started supporting para teachers in local school and ensuring improvement in quality of education in local schools.

PLL CSR team participated in world school day celebration on 23 March, 2017. As a part of celebration PLL has distributed Uniforms to Std. 8th Students. It was decided to provide two pair of uniforms to all students in school. The uniforms were prepared by Sardar Mahila Vikas Mandal a group of tribal women for employment generation and livelihood opportunity. PLL provided work order worth of Rs. 2,23,980/-

As the students studying in primary schools are coming from BPL and poor families, most of the families are not able to afford educational tours for their children. Every year school is organizing such tour sponsored by PLL. Students will get exposures to various places and gain experience. About 150 students get benefit of this tour and

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places covered like Dwarka, Somnath, Porbandar, Smruti Mandir, Naheru Planetorium, Sasan Gir etc.

PLL had sponsored community mass marriage of weaker community, participated in Shala Pravesh Utsav 2017, planted 150 of trees in nearby villages, distributed food packages during water logging observed at nearby villages, supported empowerment of Special children, engaged contractor for repair and maintenance of Toilets in nearby School, arranged cessions for awareness on solid waste management at school.

PLL supported 10th Special Olympics, Bharuch in January, 2018, sponsored project "Kaushal Setu" Skill Development Program with CIPET, Ahmedabad and trained 100 underprivileged youth, supported educational tour for Primary School of Luvara Village, provided para-teachers at school of nearby villages, sponsored community mass marriage of weaker community, supported "Startup Village" project towards Rural Youth Entrepreneurship Development Program, Supporting Swachh Bharat Abhiyan by District Administration Bharuch (Heritage Walk).

PLL signed MoA with Samagra Shiksha Abhiyan, Department of Education, Govt. of Gujarat on 23rd Jan. 2019 at Govt. Primary School, Luvara village for the Development of Primary School at Luvara Village. PLL supported District Level Special Olympics Games which was organized on 23rd February 2019. Around 250 special children, 150 volunteers including PLL volunteers and coaches participated during the event.

(July, 2019 to Dec. 2019)

PLL has signed MoU with ALIMCO to provide Aids and Equipment to disables of Bharuch District. PLL has signed MoU with Wockhardt Foundation to run Mobile Medical Unit (MMU) in nearby villages of PLL plant area. PLL has signed MoU with NHFDC to provide skill training to disable youth of Bharuch District. PLL has supported relief camp for affected community near Lakhigam during monsoon season.

(Jan. 2020 to June 2020)

PLL has conducted assessment camps at Jambusar and Vagra Taluka of Bharuch District to Aids and Equipment to disables. Kaushal Setu Skill Training with CIPET Ahmedabad 78 candidates have complated the training and 90% of them got job with the salary range of Rs. 9000 to Rs. 12000. PLL has conducted District Level Special Olympics in parnership with Kalrav Trusy Bharuch and Special Olympics, Gujarat. As a part of COVID-19 pendemic response, PLL has contributed Rs. 34.00 lakhs to

Homaly

District Health Office, Bharuch to proquer PPE Kits, Masks and Senitise materils for COVID-19 worriers. PLL has provides 4300 nos. of Ration kits worth of Rs. 25.00 lakhs to Migrant Labours, and Poor Families of nearby villages. Petronet LNG Limited (PLL) under its CSR initiatives aims at distributing 1,00,000 face masks to the migrant labor communities, slum dwellers, nearby hospitals, local police authorities & Government Offices to combat COVID-19 in the Bhaurch District of Gujarat.

(July 2020 to December 2020)

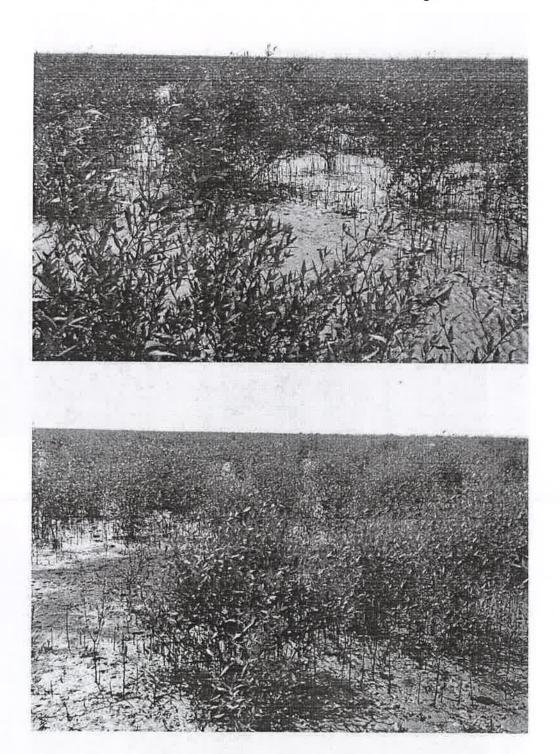
PLL has supported Construction of Priamry School, at Luvara village worth of Rs. 1,71 Crore. Construction is about to complete by March, 2021. PLL has distributed aids and equipment to about 250 disable beneficiaries at Jambusar and Vagra Taluka of Bharuch District. As a part of COVID-19 pandemic response, in addition to supporting District Health Office (CDHO) and Distributing Rations Kits to to Migrant Labours, and Poor Families of nearby villages, PLL has prepared 1,00,000 cotton masks through Women SHGs of Bharuch Distrcit. About 80 women got indirect employment during pandemic through this initiative. These masks were distributed among local communities of nearby villages, health workers, labour community, Nagarpalika Sawachhta Karmchari, Special Children and their families, Vegetable vendors, Local Police authorities, Government Offices, Security Guards, PLL employees also participated in mask distribution initiative. These masks were made of Cotton considering it environment aspect for reusable and bio-degradable properties.

(January, 2021 to June, 2021)

PLL/PLF has signed agreement with Wockhardt Foundation to run Mobile Medical Unit (MMU) in nearby villages of PLL plant area. This MMU is providing its services to nearby villages like Lakhigam, Navi Nagari, Luvara, Jageshwar, Ambetha. More than 5500 patients have been benefited during last six months. PLL/PLF has signed agreement with NHFDC to provide skill training to disable youth of Bharuch District. First batch of 30 candidate started from April, 2021. PLL/PLF has signed agreement with MOKSHDA to install environment friendly green crematorium system to reduce excessive use of wood. The works are under progress, Construction of Govt. Primary School at Luvara village with 12 classrooms and modern amenities worth of Rs .1.71 Crs. and Construction of 24 Nos. of widow quarters for BSF worth of Rs. 5.87 Crs. are going to completed by end of July, 2021. PLL/PLF skill training partner CIPET, Ahmedabad has completed skill training of 75 candidates and remaining 25 candidates are under progress. Candidate have secured job of Rs. 10,000 per month to Rs. 15,000 per month post completion of training programme. Most of the CSR projects got delayed due COVID-19 restrictions.

Formald

Mangroves planted in 50 ha. area at NADA Coast during 2009-10



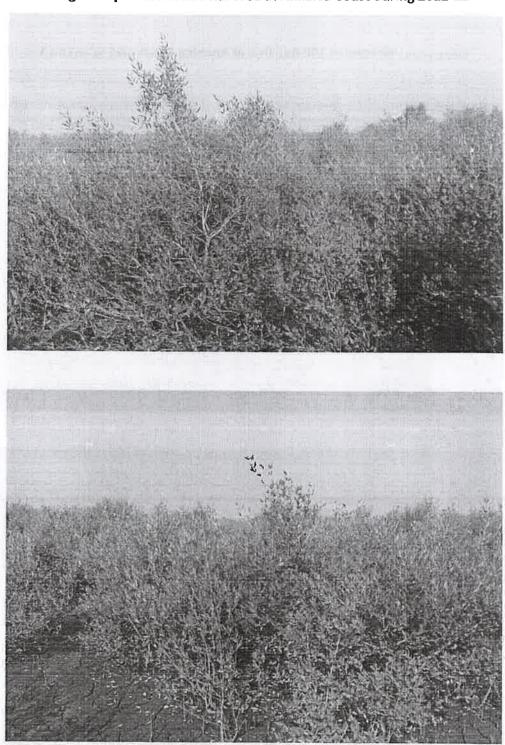
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Mangroves planted in 100 ha. area at Ankalva Coast during 2010-11



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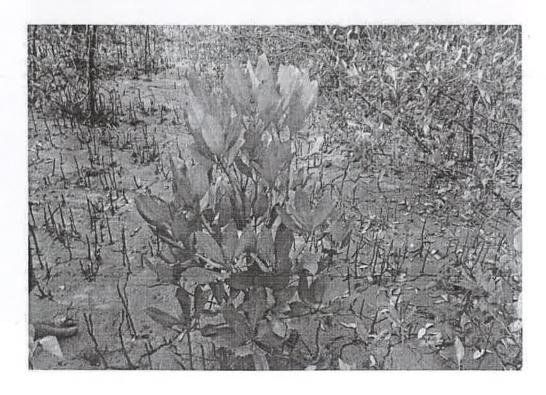
Mangroves planted in 200 ha. area at Ankalva Coast during 2011-12



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Mangroves planted in 200 ha. area at Ankalva Coast during 2012-13

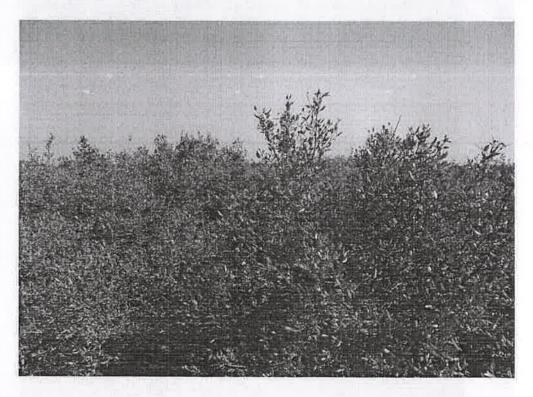




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Mangroves planted in 100 ha. area at Bhavnagar Coast during 2012-13

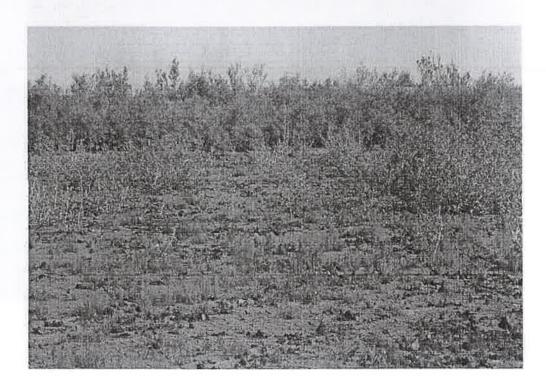




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Mangroves planted in 200 ha. area at Bhavnagar Coast during 2013-14

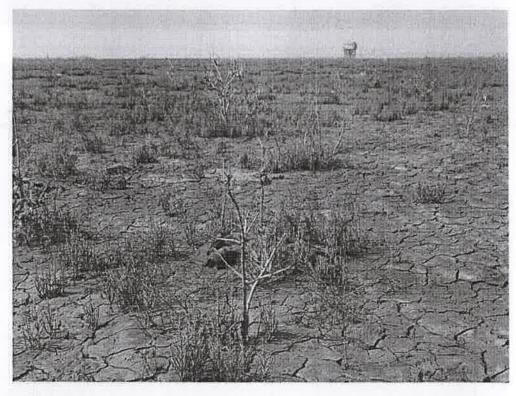




Asmauld

Mangroves planted in 200 ha. area at Bhavnagar Coast during 2014-15

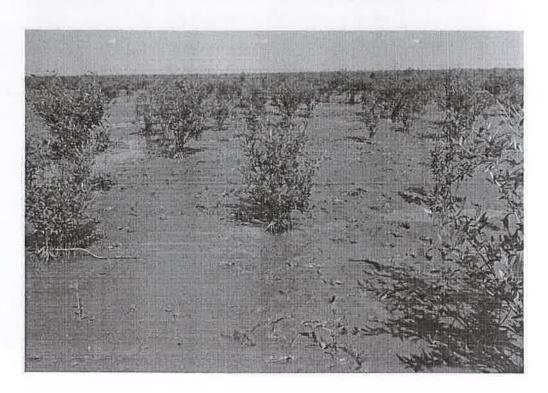




Domailes

Mangroves planted in 50 ha. area at at Kentiyajal Coast during 2014-15





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Mangroves planted in 50 ha. area at Gadhula, Talaja Coast during 2016-17





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ENGINEERING DESIGN BASIS STATIC EQUIPMENT

SECTION-2 DOCUMENT No. A324-000-16-46-DB-01 Rev. 0

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ENGINEERING DESIGN BASIS (STATIC EQUIPMENT)

PROJECT: LNG TERMINAL AT DAHEJ

CLIENT: M/s PLL

JOB NO.: A324

(EIL) (PLL)

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
Α	25-05-2012	ISSUED FOR CLIENT'S COMMENTS/APPROVAL	RS	TG	RKT
0	07.09,2012	ISSUED AFTER CLIENT COMMENTS INCORPORATED	RS	TG	RKT

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ENGINEERING DESIGN BASIS STATIC EQUIPMENT

SECTION-2 DOCUMENT No. A324-000-16-46-DB-01 Rev. 0

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PART – 2 (DESIGN PHILOSOPHY)	6





ENGINEERING DESIGN BASIS STATIC EQUIPMENT

SECTION-2 DOCUMENT No. A324-000-16-46-DB-01 Rev. 0

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REFERENCED PUBLICATIONS 1.0

Codes and Standards: a)

The following codes and standards in their latest edition including latest addenda as on the date of first issue of this design basis shall be followed unless otherwise specified in the requisition for the design, fabrication, inspection and testing of Vessels. Double Wall Storage Tanks. Air coolers & heat exchangers:

ASME SEC. VIII DIV.1 Pressure For Vessels. Heat Exchangers

For material specification ASME SEC. II **ASTM** For material specification

ASME SEC. V Non Destructive Examination

ASME SEC. IX For welding

ASME B31.3 Process piping BS EN 14620 PART I TO V Flat bottom, vertical, cylindrical

tanks for storage of refrigerated, liquefied gases with operating temperatures between 0° C and (-)

165° C

BS 8110 + Amendements Structural use of concrete

BS EN 1473 Installation and equipment for LNGdesign of onshore installations

API 620 For Low Pressure Storage Tanks

API 2000 Ventina atmospheric and low pressure storage Non tanks,

refrigerated and refrigerated

API 2003 Protection against ignitions arising

out of static, lightning & stray

currents

API 678 Accelerometer Based Vibration

Monitoring System - Reaffirmed

(1987)

API 2550 Standard Methods

Measurements and calibration of

upright cylindrical tanks

ACI 373 Design & construction of circular

prestressed concrete structures



ENGINEERING DESIGN BASIS STATIC EQUIPMENT

SECTION-2 DOCUMENT No. A324-000-16-46-DB-01 Rev. 0

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ACI 305R	Hot weather concrete
ASTM 549 NFPA 59A	Perlite loose fill insulation Production, storage & handling of LNG
NFPA 70	National Electric Code
NFPA 780	Standard for Installation of
FIP recommandations	Lightning protection system Acceptance and application of post tensioning system
PI-201-77	Compacted density
OISD 194	Standard for the storage and
IS: 875/SITE DATA	handling of LNG For wind load consideration
IS: 1893/SITE DATA	For seismic design consideration
ASME B 16.5	Steel Pipe flanges and pipe fittings
ASME B 16.47	For large diameter flanges
ASME B 16.20/ B 16.21	For gaskets
TEMA Class R	For shell and tube Exchanger
API 661	For Air Cooled Exchanger
IS 800	For Air Cooled Exchanger Structural Design

b) Statutory Provisions:

National laws and statutory provisions together with any local by-laws for the state shall be complied with. Static and Mobile Pressure Vessel (SMPV) rules and OISD norms as applicable shall also be complied with.

2.0 DESIGN PHILOSOPHY / GENERAL CRITERIA

Equipment shall be designed in compliance with the latest design code requirements and applicable standards/ specifications. All design calculations shall be performed considering all applicable loads for erection, operating and hydro test conditions.

2.1 Full Containment with Prestressed Concrete Outer Tank Wall

The storage tanks are to be above ground, flat bottom, and vertical full containment Prestressed cylindrical type. The under face of the concrete slab shall be minimum two meter above the ground, contractor for Storage Tank during detail engineering shall work out the actual height of the concrete slab.

A concrete outer tank and a roof constructed of reinforced concrete with carbon steel vapor barriers on the inside of the wall & base slab.

Fonal



DISASTER MANAGEMENT INSTITUTE (DMI), BHOPAL

(An ISO 17020:2012 Accredited Institute)

ERDMP CERTIFICATE

This certificate has been awarded to

M/s Petronet LNG Limited

GIDC Industrial Estate, Plot No. 7/A, Dahej Dist. Bharuch (Gujrat) 392130 (India)

n recognition of the entity's "Emergency Response & Disaster Management Plan" which complies with the requirements of PNGRB Notification G.S.R. 39(E) PNGRB "Codes of Practices for Management Plan (ERDMP) Regulations, 2010" Emergency Response and Disaster

Expiry Date: 29.12.2022

Date of Issue 30.12.2019

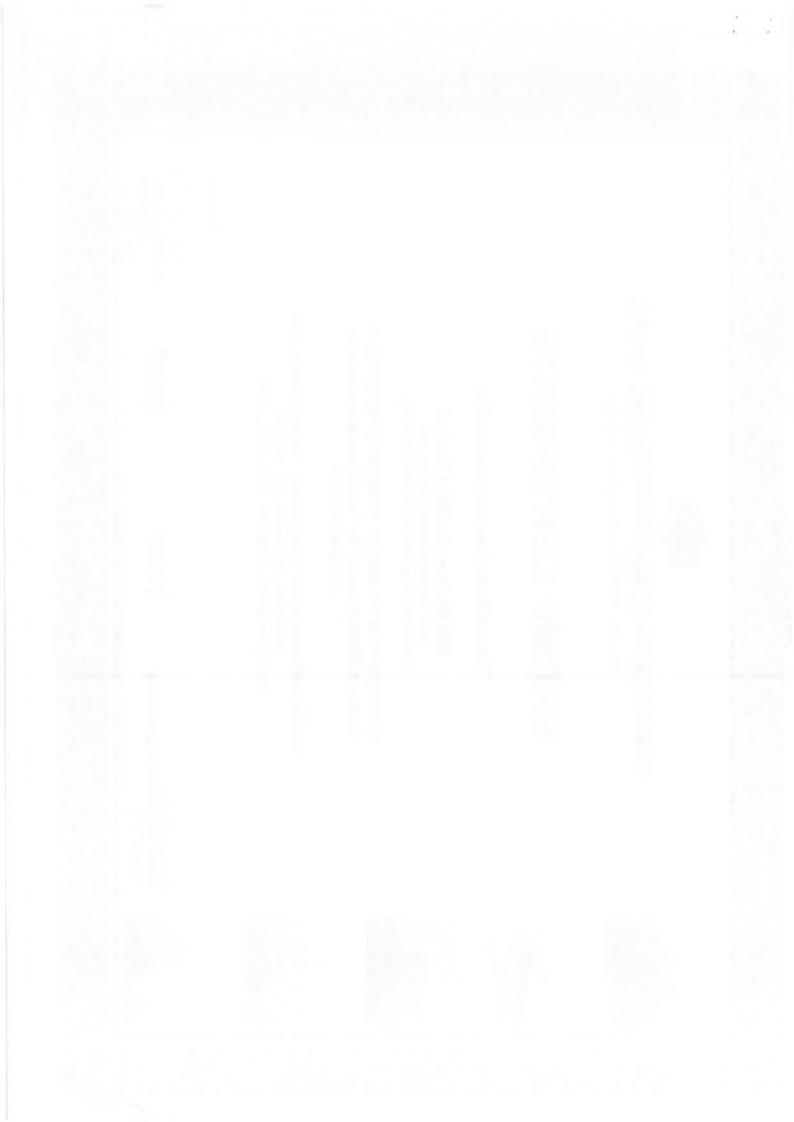
Dr. Rakesh Dubey WET DIRECTO

ssued by

Certificate Number: 1615/ERDMP-126/Petronet LNG Limited/











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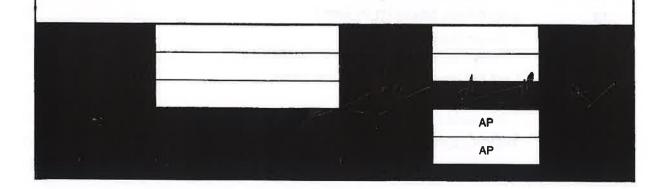
PROJECT NAME

DAHEJ EXPANSION PHASE - IIIA

LNG REGASIFICATION FACILITIES

OWNER

PETRONET LNG LTD





Tomails



Dahej Expansion Phase IIIA LNG Regasification Facilities PLD3A/R



ISSUE DATE: 17.04.2015

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15	CONCLUSIONS	103



Petronet LNG Limited

GIDC Industrial Estate, Plot No. 7/A, Dahei. Taluka : Vagra, Dist. Bharuch (Gujarat) - 392130 (India) Tel.: 02641-300345 / 300405, Fax: 02641-300310 / 300306

www.petroneting.com CIN: L74899DL 1998PLCO93073 GST No.: 24AAACP8148D1ZM

Ref.: PLL/DHJ/HSE/GPCB/2021/08

Date: April 19, 2021

GPCB XGN ID: 15479

To,

Gujarat Pollution Control Board Paryavaran Bhavan Sector-10 A GANDHINAGAR - 382 010

Sub: Environmental Statement for the financial year April 2020 to March 2021

Dear Sir.

Enclosed Please find Environmental Statement (FORM - V) for the financial year April 2020 to March 2021 for your kind perusal.

Thanking you,

Yours faithfully,

For Petronet LNG Limited

S B Singh ED (Plant Head)

Encl: As above

S. B. Singh Plant Head Petronet LNG Limited

Dahej 392130

Copy to: Gujarat Pollution Control Board, Bharuch

Post Received Gujarat Pollution Control Board

BHARUCH

FORM-V **ENVIRONMENTAL STATEMENT** (See rule 14)

Environmental Statement for the financial year ending with 31st March 2021

PART - A

i. Name and address of the owner/occupier of the industry operation or process:

Mr. S B Singh ED (Plant Head) M/s Petronet LNG Limited Plot.7/A, GIDC Industrial Estate Dahej, Taluka Vagra Dist. Bharuch - 392130 Ph. 02641-670299/201

ii. Industry category Primary-(STC Code) Secondary-(STC Code)

Not Applicable.

iii. Production category - Dahej Unit.

17.5 MMTPA (Million Metric Tons per Annum) Regasification Capacity Receipt of LNG through Ship, storage, Regasification and Despatch of Natural Gas

- iv. Year of establishment: 2nd April, 1998
- v. Date of the last environmental statement submitted: 21st May, 2020

PART - B

Water and Raw Material Consumption:

i. Water consumption in m³/d:

Process

: Nil

Cooling

: Nil

Domestic : 21.2 m³/day

	Process water consumption per unit of product output		
Name of Products	During the previous	During the current	
180	financial year	financial year	
Regasified Liquefied Natural gas (RLNG)	Nil	Nii	

ii. Raw material consumption:

output ng the previous During the current nancial year financial year
5 1
annial year financial year
ianciai year linanciai year
Y. 2019-20) (F.Y. 2020-21)
36 MMTPA 15.558 MMTPA
5.79 MMSCM 21353.55 MMSCM of send out RLNG
8

^{*} Industry may use codes if disclosing details of raw material would violate contractual Obligations, otherwise all industries have to name the raw materials used.

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

Poliutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water	No effluents generated	Not Applicable	Not Applicable
(b) Air (Stack emissions from Gas Turbine Generator)		SPM: Nil SOx: Nil NOx: 19.6 ppm	Concentration of pollutants discharged is well within the GPCB norms.

PART - D HAZARDOUS WASTES

(as specified under Hazardous and Other Wastes (Management & Trans boundary Rules, 2016)

	Total Quantity (Kg)		
Hazardous Wastes	During the previous financial year (F.Y. 2019-20)	During the current financial year (F.Y. 2020-21)	
1. From Process	Nil	Nil	
2. From Pollution Control Facilities	Nil	Nil	
3. Used oil	3,990 Liters	10,500 Liters	
Waste Residue containing Oil	Nil	846.3 Kgs	
5. Insulation Waste	750 Kgs	Nil	
6. Paint Waste	Nil	1160 Kgs	

PART- E

SOLID WASTES

	Total Quantity (Kg)		
Solid Wastes	During the previous financial year (F.Y. 2019-20)	During the current financial year (F.Y. 2020-21)	
a. From process	Nil	Nil	
b. From Pollution Control Facility	Nil	Nil	
c. (1) Quantity recycled or re- utilized within the unit.	Nil	Nil	
(2) Sold :	Nil	Nil	
(3) Disposed: a) E Waste	470 Kg	1090 Kg	

PART - F

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.

Hazardous waste: 1. Used oil 10,500 Liters (Disposal through GPCB approved Recycler/ Preprocessor, M/s R.K. steel, Bharuch)

2. Paint Waste of 1160 Kgs dispossed to approved incineration site of M/s Bharuch Enviro Infrastructure (BEIL) , Dahej for incineration process

Solid Waste

: Waste residue containg oil(Cotton waste) of 846.3 Kgs dispossed to approved incineration site of M/s Bharuch Enviro Infrastructure (BEIL), Dahej for incineration process.

E-Waste

: Total 1090 Kg E - waste dispossed to GPCB approved agency , M/s Earth E Waste Managemnet Pvt. Ltd. , Surat

Lead Acid Batteries: Total 76 nos batteries are disposed off through supplier buy back system under Batteries (Management and Handling) Amendment Rules, 2010. Details are as follows.

Sr No	Date	Description	Quantit y (Nos)	Agency
1	19.02.2021	Pulse Lite Battery	16	DECCAN SALES & SERVICE PVT. LTD.
2	04.03.2021	SMF Rechr. Battery EP 26-12, 12V, 26AH	26	UMA BATTERY
3	04.03.2021	Battery EXIDE 12V 42AH	34	UMA BATTERY

PART - G

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

Regular Environmental monitoring is carried out through GPCB approved agency. (M/s. Unistar Environment & Research Labs Pvt. Ltd, Vapi) and monitored results are well within the consent limit

Page 4 of 6

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

The total Green Belt area approximately 1,66,000 Sq. meters has been allocated in and around periphery wall. Whereas, PH-I & PH-II green belt has been developed and maintained and the PH-III green belt (57,000 Sqm) area development has been initiated. In addition to this, the total lawns/ green cover developed & maintained till date is 30000 Sq.m.

S.No	Financial Year	Amount Spent (Rs. In Lacs)	Purpose of Investment	
1	2009-10	33.22	Development & maintenance of Green belt and Mangrove Plantation during the year.	
2	2010-11	55.00	Development & maintenance of Green belt and Mangrove Plantation during the year.	
3	2011-12	93.31	Development & maintenance of Green belt and Mangrove Plantation during the year.	
4	2012-13	109.57	Development & maintenance of Green belt and Mangrove Plantation during the year.	
5	2013-14	95.20	Development & maintenance of Green belt and Mangrove Plantation during the year.	
6	2014-15	88.83	Development & maintenance of Green belt and Mangrove Plantation during the year.	
7	2015-16	42.20	Development & maintenance of Green belt and Mangrove Plantation during the year.	
8	2016-17	77.96	Development & maintenance of Green belt and Mangrove Plantation during the year.	
9	2017-18	71.08	Development & maintenance of Green belt during the year.	
10	2018-19	60.93	Development & maintenance of Green belt during the year.	
11	2019-20	51.11	Development & maintenance of Green belt during the year.	
12	2020-21	78.96	Development, maintenance of Green belt & related to STP project during the year.	
	Total	857.37 Lakh		

PART-I

Any other particulars for improving the quality of the environment.

Total 1150 ha. Mangrove Plantation undertaken along the Gujarat Coast till date as furnished below:

S.No	Financial Year	Covered Area	Location	Consultation with Forest Department/ GEC
1	2009-10	50 ha.	NadaVillage, Jambusar, Bharuch	Gujarat Ecology Commission (GEC), Govt. of Gujarat
2	2010-11	100 ha.	AnkalvaVillage, Hansot, Bharuch	Gujarat Ecology Commission (GEC) , Govt. of Gujarat
3	2011-12	200 ha.	AnkalvaVillage, Hansot, Bharuch	Gujarat Ecology Commission (GEC) , Govt. of Gujarat
4	2012-13	200 ha.	AnkalvaVillage, Hansot, Bharuch	Gujarat Ecology Commission (GEC) , Govt. of Gujarat
		100 ha.	RoniyaBhatha, Nr. Nirma, Bhavanagar	Bhavnagar Forest Division, Govt. of Gujarat
5	2013-14	200 ha.	RoniyaBhatha, Nr.Lock Gate, Bhavanagar	Bhavnagar Forest Division, Govt. of Gujarat
6	2014-15	200 ha.	RoniyaBhatha, Nr.Lock Gate, Bhavanagar	Bhavnagar Forest Division, Govt. of Gujarat
7	2014-15	50 ha.	Kentiyajal, Hansot Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
8	2016-17	50 ha.	Gadula Village, Talaja Taluka, Mahuva, Bhavnagar	Bhavnagar Forest Division, Govt. of Gujarat
	Total	1150 ha.		

(Signature of person carrying out an industry – operation or process)

Name:

Mr. S B Singh

Designation:

Address:

S.B. Singh ED (Plant Head)

Plant Head M/s Petronet LNG Limited Petronet LNG Limited

Plot.7/A, GIDC Industral Estate 392130

Dahej, Taluka Vagra Bharuch - 392130 Ph. 02641-670299/201

Homewall.

ANNEXURE VIII



Date: 05/06/2021

PETRONET LING LIMITED

FIRST FLOOR, WORLD TRADE CENTRE, BABAR ROAD
BARAKHAMBA LANE, NEW DELHI
DELHI - 110001
DELHI
DELHI
INDIA
07AAACP8148D1ZI(GSTIN Number)

Policy No : 0304006962 Renewal : 00 Endorsement : 00

Dear Sir / Madam,

We thank you for choosing Tata AIG General Insurance Company Ltd. as your preferred insurer. Your Policy No. Is 0304006962 00 00.

We are glad that you have chosen our product PUBLIC LIABILITY ACT and given us an opportunity to be your risk carrier for this Product.

'Casualty Line' caters to most of the Enterprises / Industries in India, whether Large, Medium or Small. As one of the India's most established insurance companies, we understand these unique needs of coverage. At Tata AIG we care for you and would strive to offer convenience coupled with a range of products that cater continously to your ever increasing needs.

Enclosed please find your policy docket based on the information furnished by you in the Proposal.

We look forward to a long and mutually beneficial relationship and providing you wider range of benefits in the years to come.

Yours Sincerely, For Tata AIG General Insurance Company Limited

Authorized Signatory

Mulqu

moult.



PUBLIC LIABILITY ACT POLICY POLICY SCHEDULE

Agent/Broker Name -DIRECT

Agent/Broker License Code - NA:Agent/Broker :Contact No - 24*7 Tollfree Helpline 1800-266-7780

Attaching to and forming part of Policy No. Name of Insured Owner:

Business: Address:

0304006962 00 00

PETRONET LNG LIMITED Indian oil and gas which imports liquefied natural gas and set up LNG terminals in the country

FIRST FLOOR, WORLD TRADE CENTRE, BABAR ROAD

BARAKHAMBA LANE, NEW DELHI

DELHI - 110001 DELHI

DELHI INDIA

07AAACP8148D1ZI(GSTIN Number)

Place of supply -DELHI State code -07

Territorial limits:

Anywhere in India

Policy Period: From:

02/06/2021 12:00 AM/ PM

To Midnight of: 01/06/2022 12:00 AM/ PM

Indemnity limit: Rs 50,000,000.00 in respect of any one accident and not exceeding 3 times thereof in the aggregate during the policy period.

Service Tax Registration No:

Premium

₹ 32,428,40

UGST/SGST @9 %

₹ 2,919.00 ₹ 2,919.00

CGST @9 % Contribution to the

Environment Relief Fund: 32,428.40

Date of Proposal and declaration:02/06/2021

In witness whereof the undersigned being duly authorized by the company and on behalf of the company has hereto set his hand at DELHI on 05/06/2021

The stamp duty of 0.5 paid in cash or demand draft or by pay order, vide Receipt/Challan no: CSD/291/2021/1192 dated the 24/03/2021

For Tata AIG General Insurance Company Limited

Mulpu

Date:05/06/2021 Place : DELHI

> **Policy Servicing Office** Tata AIG General Insurance Company Limited
> UNIT NOS. 721 & 722,, 7TH FLOOR DLF TOWER B,,DELHI,DELHI,DELHI-110025
> Tel No:91-91-7400010485

Insurance is the subject matter of the solicitation, For more details on risk factors, terms and conditions, please read sales brochure carefully before concluding a sale TATA AIG General Insurance Company Ltd. Regd. Office. 15th floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Off Senapatr Bapat Marg, Lower Parel, Mumbai- 400 013 IRDA Registration No.108, CIN No. U85110MH2000PLC128425, PAN: AABCT3518Q, UIN No. IRDAN108CP0058V01201819

Website: www.tataarg.com.24X7.Tollfree Helpline 1800-266-7780 E-mail. customersupport@tataarg.com

Monaulit.