Petronet LNG Limited
GIDC Industrial Estate, Plot No. 7/A, Dahej,
Taluka : Vagra, Dist. Bharuch (Gujarat) - 392 130 (India)
Tel.: 02641 - 670200 / 257
www.petronetlng.com
CIN: L74899DL 199PLCO93073

REF: PLL/DHJ/HSE/MoEF/2025/08 Date: 8th Nov 2025

To,
Director,
Ministry of Env., Forest and Climate Change
Indira Paryavaran Bhawan,
Jorbagh Road,
New Delhi – 110 003

Subject: : Six Monthly Compliance Report for the period April 2025 to Sept 2025 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.

Ref : (a) F. No. 11-63/2011-IA-III Dated 26th February, 2014 (b) ENV-10-2013-71-E Dated 13th January, 2014 (c) F. No. 11-63/2011-IA-III Dated 04th Dec, 2020 (d) Extension of EC validity vide EC ID No EC24A3501GJ5932889N dated 26/04/2025

Dear Sir,

The six-monthly compliance report for the period April 2025 to Sept 2025 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 uploaded in "PARIVESH 2 portal.

This is for your information and reference.

Thanking you,
Yours faithfully,

Sanjay Kumar
Plant Head
Petronet LNG Limited
Dahej-392130

Sanjay Kumar
GGM & President (Plant Head)
For Petronet LNG Limited

Copy to:-

1) Director (Environment)
Forests & Environment Department,
Government of Gujarat,
Block No. 14, 8th Floor, Sachivalaya,
Gandhinagar – 382 010

2) MoEF & CC
Regional Office
Karmayogi Bhawan
Block -3, F-2 Wing, Near CH-3 Circle
Sector -10A, Gandhinagar-382010

3) Unit Head - Bharuch Division
Gujarat Pollution Control Board
Paryavaran Bhavan, Sector-10 A
GANDHINAGAR – 382 010 (Gujarat)

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

Your (Half Yearly Compliance Report) has been Submitted with following details

Proposal No	IA/GJ/MIS/572/2011
Compliance ID	290201178
Compliance Number(For Tracking)	EC/M/COMPLIANCE/290201178/2025
Reporting Year	2025
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	10-11-2025
RO/SRO Name	Dr G Trinadh Kumar
RO/SRO Email	agmu174.ifs@nic.in
State	GUJARAT
RO/SRO Office Address	Integrated Regional Offices, Gandhi Nagar

Note:- SMS and E-Mail has been sent to Dr G Trinadh Kumar, GUJARAT with Notification to Project Proponent.

Half Yearly Compliance Report
2025
01 Dec(01 Apr - 30 Sep)

Acknowledgement

Proposal Name	Installation of terminal facilities to handle 10 MMTPA of additional LNG at M/s Petronet LNG Ltd, Dahej (Phase III Expansion)
Name of Entity / Corporate Office	Petronet LNG Limited, Dahej
Village(s)	N/A
District	BHARUCH

Proposal No.	IA/GJ/MIS/572/2011
Plot / Survey / Khasra No.	N/A
State	GUJARAT
MoEF File No.	11-63/2011-IA-III

Category	INFRA-1
Sub-District	N/A
Entity's PAN	*****8148D
Entity name as per PAN	PETRONET LNG LIMITED

Compliance Reporting Details

Reporting Year	2025
Remarks (if any)	SIX MONTHLY COMPLIANCE REPORT TO (FOR THE PERIOD APRIL 25 TO SEPT 25) THE CONDITION MENTIONED IN MOEF LETTER NO. F.No.11-63/2011-IA-III, DATED: 26th February, 2014 AND LETTER NO. F.No.11-63/2011-IA-III DATED 04TH December 2020 (For Phase III Expansion) and Extension of EC validity vide EC ID No EC24A3501GJ5932889N dated 26/04/2025
Reporting Period	01 Dec(01 Apr - 30 Sep)

Details of Production and Project Area

Name of Entity / Corporate Office Petronet LNG Limited, Dahej

	Project Area as per EC Granted	Actual Project Area in Possession
Private	0	0
Revenue Land	0	0
Forest	0	0
Others	84.57	84.57

Total	84.57	84.57

Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	RLNG	Million Tons per Annum (MTPA)	N/A	20 MMTPA	16.06	

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details
1	Statutory compliance	"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.

PPs Submission: 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 EC to CTE -59863 dated 26/02/2022 are obtained	Date: 08/11/2025

2	MISCELLANEOUS	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.

PPs Submission: Complied Complied and detail of compliance attached as Annexure-I.	Date: 08/11/2025

3	MISCELLANEOUS	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.

PPs Submission: 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.	Date: 08/11/2025

4	Risk Mitigation and Disaster Management	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

PPs Submission: Complied The terminal is designed considering all the specified factors for safe operations. ERDMP plan is updated and approved from M/s Bosai Safety dated 16.10.2025. Please Refer Annexure V for valid ERDMP certificate.	Date: 08/11/2025

5	Risk Mitigation and Disaster	Oil Spill Contingency Management Plan shall be put in place.

	Management	
PPs Submission: Complied Oil spill contingency plan, is available		Date: 08/11/2025
6	MISCELLANEOUS	Online sensor for load monitoring shall be provided, as committed
PPs Submission: Complied Online stack monitoring instrument are installed for gas turbine stacks		Date: 08/11/2025
7	MISCELLANEOUS	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.
PPs Submission: Complied These sensors are placed as per design and as per F and G Mapping study for instant detection of any leakage in Phase-IIIA and Phase-IIIB1 Regasification Project. Attached Annexure VI F and G Study report Index page for your reference		Date: 08/11/2025
8	Corporate Environmental Responsibility	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.
PPs Submission: 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.		Date: 08/11/2025
9	Risk Mitigation and Disaster Management	All the recommendations 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
PPs Submission: Complied ERDMP plan is updated and approved from M/s Bosai Safety dated 16.10.2025. Please Refer Annexure V for valid ERDMP certificate.		Date: 08/11/2025
10	MISCELLANEOUS	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.
PPs Submission: 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. Detailed organogram of EMC is attached as Annexure-XII for your reference.		Date: 08/11/2025
11	Statutory compliance	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
PPs Submission: 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.		Date: 08/11/2025
12	MISCELLANEOUS	No construction work other than those permitted in Costal

		Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
PPs Submission: 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.		Date: 08/11/2025
13	MISCELLANEOUS	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.
PPs Submission: Complied EMC is already setup in the company, and it will be used for Environment Monitoring of expansion project. Detailed organogram of EMC is attached as Annexure-XII for your reference.		Date: 08/11/2025
14	MISCELLANEOUS	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.
PPs Submission: Complied Funds earmarked for environment management plan is included in budget and being monitored regularly.		Date: 08/11/2025
15	Marine/Coastal	Condition Mention in LETTER NO. F.No.11-63/2011-IA-III dated 04TH December 2020 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.
PPs Submission: Complied Marine ecological monitoring study conducted in June, 2025 by GPCB authorized vendor M/s Unistar Environment and Research Labs Pvt. Ltd. Attached Annexure XI for Marine ecological monitoring report.		Date: 08/11/2025
16	MISCELLANEOUS	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 26th February 2014 for period of thre years i.e up to 25th 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.
PPs Submission: Complied All previous EC conditions are Complied. Half yearly compliance report submitted regularly.		Date: 08/11/2025

General Conditions

Sr.No.	Condition Type	Condition Details
1	MISCELLANEOUS	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.

PPs Submission: Complied No digging activity effected the ground water quality during the construction. Ground water samples are taken and being monitors regularly. Ground water monitor data and report are attached in Annexure II		Date: 08/11/2025
2	MISCELLANEOUS	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.
PPs Submission: Complied Entry of GPCB and all government bodies are taken care for any inspection and all required information submitted as and when visited.		Date: 08/11/2025
3	MISCELLANEOUS	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.
PPs Submission: Complied MoEF and CRZ Half yearly compliance report submitted regularly. Last half yearly compliance report for period October 24 to March 2025 was uploaded on Parivesh 2 portal dated 28.04.2025.		Date: 08/11/2025
4	MISCELLANEOUS	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.
PPs Submission: Complied Noted and complied		Date: 08/11/2025
5	MISCELLANEOUS	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
PPs Submission: Complied Agreed. No Such case till date.		Date: 08/11/2025
6	MISCELLANEOUS	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.
PPs Submission: Complied Wherever there is change in project profile or change in implantation agency, we had taken new TOR and Environment clearance. Project wise Environment Clearance received as follows. MoEF and CC LETTER NO. J-17011/11/2000-1A-III DATED 27TH DECEMBER, 2000 for Phase I proejct MoEF and CC LETTER NO. J-17011/11/2000-IA-III DATED 23rd NOVEMBER 2005 for Phase II project MoEF and CC LETTER NO J-17011/11/2000-IA-III, DATED: 14th NOVEMBER, 2008 for STAND BY JETTY project MoEF and CC LETTER NO F.No.11-63/2011-IA-III, DATED: 26th February, 2014 amended vide letter no LETTER NO. F.No.11-63/2011-IA-III DATED 04TH December 2020 and Extension of EC validity vide EC ID No EC24A3501GJ5932889N dated 26/04/2025 for Phase III project		Date: 08/11/2025
7	MISCELLANEOUS	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.

PPs Submission: 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.12th May 2014.		Date: 08/11/2025
8	MISCELLANEOUS	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.
PPs Submission: 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.13th May 2014		Date: 08/11/2025
9	MISCELLANEOUS	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.
PPs Submission: Complied Copy of environment clearance was already forwarded to concerned offices		Date: 08/11/2025
10	Statutory compliance	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 rules made thereafter.
PPs Submission: Complied Mention Environment act and Rules are followed. PLI Policy renewed for one year w.e.f 02.06.2025. Attached Annexure VIII for PLI policy		Date: 08/11/2025
11	Statutory compliance	All other statutory clearances such as the 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
PPs Submission: Complied Applicable clearances from following authorities obtained, a copy of same was submitted vide our letter no. PLL/DHJ/MoEF/011 Dt.13th 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.		Date: 08/11/2025
12	MISCELLANEOUS	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.
PPs Submission: 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.13th 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.		Date: 08/11/2025

13	MISCELLANEOUS	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.
PPs Submission: Complied Noted and Agreed.		Date: 08/11/2025
14	MISCELLANEOUS	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.
PPs Submission: Complied Agreed. No Such case till date.		Date: 08/11/2025
15	MISCELLANEOUS	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.
PPs Submission: Complied Six monthly compliance are uploaded at company website www.petronetlng.in Attached Annexure IX for screen shot of website.		Date: 08/11/2025
16	MISCELLANEOUS	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 processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.
PPs Submission: 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.13th May 2014. The Environment and CRZ Clearance is already uploaded at company website www.petronetlng.in		Date: 08/11/2025
17	MISCELLANEOUS	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
PPs Submission: 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 with copy to GPCB and CPCB.		Date: 08/11/2025
18	MISCELLANEOUS	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.
PPs Submission: 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.		Date: 08/11/2025

Visit Remarks

Last Site Visit Report Date:	N/A
Additional Remarks:	SIX MONTHLY COMPLIANCE REPORT TO THE CONDITION MENTIONED IN MOEF LETTER NO. F.No.11-63/2011-IA-III, DATED 26th February, 2014 AND LETTER NO. F.No.11-63/2011-IA-III DATED 04TH December 2020 (For Phase III Expansion) and Extension of EC validity vide EC ID No EC24A3501GJ5932889N dated 26/04/2025

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 30.09.2025

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

SR. NO.	CONDITIONS	STATUS
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	Noted for compliance. 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 approved from M/s Bosai Safety dated 16.10.2025. Please Refer Annexure – V for valid ERDMP certificate.
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. Please Refer Annexure – XIII for ISO 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 approved from M/s Bosai Safety dated 16.10.2025. Please Refer Annexure – V for valid ERDMP certificate.
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 no. PLL/DHJ/MoEF/011 Dt.13th 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.
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, and it will be used for Environment Monitoring of expansion project. Detailed organogram of EMC is attached as Annexure-XII for your reference.

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.	Agreed. 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. PLL is ISO 14001(Environment Management System) certified company. Procedure is adopted and followed strictly to protect the environment. Annual external environmental audit for ISO 14001 certification is carried out. Pls refer Annexure XIII for ISO14001 certificate. Also, Monthly Environmental monitoring done through GPCB approved agency, and all parameters are under prescribed limit. Pls refer Annexure II for Environment monitoring data. Six Monthly Marine ecological monitoring is also

		carried out for monitoring marine ecological condition. Last Marine ecological monitoring was conducted on 7th June ,2025 by authorized vendor M/s Unistar Environment and Research Labs Pvt. Ltd. Latest marine ecological monitoring report is attached as **Annexure – XI.**
15	A six monthly progress reports regarding the compliance of the conditions shall be submitted to this department.	Complied Half yearly compliance report submitted regularly
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.	Noted for compliance. No such case till date.

ANNEXURE - II - ENVIROMENT DATA

AMBIENT AIR QUALITY STATUS REPORT

All units are in µg/m^3.

Sr.no.	Month	PM10		PM2.5		SOx		NOx		HC as Methane CH_4	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	NAAQ norms	100 µg/m^3		60 µg/m^3		80 µg/m^3		80 µg/m^3		Absent	
1	Apr-25	48.00	59.00	17.00	28.00	12.60	19.60	18.20	26.70	BDL	BDL
2	May-25	48.00	59.00	18.00	28.00	13.40	20.20	17.60	25.70	BDL	BDL
3	Jun-25	54.00	60.00	18.00	27.00	13.20	19.60	16.70	24.50	BDL	BDL
4	Jul-25	49.00	59.00	17.00	26.00	12.60	19.50	17.20	24.30	BDL	BDL
5	Aug-25	48.00	59.00	16.00	24.00	12.70	19.60	16.20	24.60	BDL	BDL
6	Sep-25	48.00	59.00	17.00	26.00	12.60	19.50	17.20	24.30	BDL	BDL
7	Oct-25										
8	Nov-25										
9	Dec-25										
10	Jan-26										
11	Feb-26										
12	Mar-26										
	Range (April-25 to Sept 25)	48-60		16-28		12.6-20.2		16.2-26.7		BDL	

STACK EMISSION AIR QUALITY STATUS REPORT

Sr.no.	Month	GTG		
		SPM	SO_X	NO_X
GPCB norms		150 mg/NM^3	100 ppm	50 ppm
1	Apr-25	Not monitored due to non operational GTGs		
2	May-25	Not monitored due to non operational GTGs		
3	Jun-25	BDL	BDL	18.20
4	Jul-25	Not monitored due to non operational GTGs		
5	Aug-25	Not monitored due to non operational GTGs		
6	Sep-25	Not monitored due to non operational GTGs		
7	Oct-25			
8	Nov-25			
9	Dec-25			
10	Jan-26			
11	Feb-26			
12	Mar-26			
	Range (April-25 to Sept 25)			

BDL: Below Detection Level.

NOISE LEVEL REPORT

Sr.no.	Location	Unit	Limit	Apr-25		May-25		Jun-25		Jul-25		Aug-25		Sep-25		Oct-25		Nov-25		Dec-25		Jan-26		Feb-26		Mar-26	
				L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}	L_{day}	L_{night}
1	North	decibel	Day-75 db Night-70db	58.3	49.4	57.6	48.7	58.2	49.2	57.6	48.3	58.6	49.4	57.6	48.4												
2	East	decibel	Day-75 db Night-70db	56.1	45.2	55.2	44.5	56.3	45.5	55.7	44.3	56.4	45.7	55.3	44.1												
3	West	decibel	Day-75 db Night-70db	57.6	46.7	56.4	45.3	57.6	46.1	56.2	45.6	57.3	46.2	56.7	45.3												
4	South	decibel	Day-75 db Night-70db	59.4	48.2	58.1	47.2	59.4	48.4	58.4	47.2	59.1	48.3	58.2	47.6												

GROUND WATER QUALITY STATUS REPORT

Sr.no.	Parameter	Unit	Jun-25		Sep-25		Dec-25		Mar-26	
			GW1	GW2	GW1	GW2	GW1	GW2	GW1	GW2
1	Temperature	*C	30	30	30	30				
2	PH	-	8.93	8.4	7.77	8.36				
3	Total Dissloved Solids (TDS)	mg/L	2256	1210	2068	1182				
4	Chlorides as CL	mg/L	724.3	187.2	674.2	164.7				
5	Sulphate as SO4	mg/L	144.5	340.5	131.6	126.2				
6	BOD (5 days @ 20°C)	mg/L	2	BDL	3	BDL				
7	COD	mg/L	8.2	BDL	7.6	BDL				
8	Oil & Grease	mg/L	BDL	BDL	BDL	BDL				
9	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	0.78	1.13	0.56	1.03				
15	Copper as Cu	mg/L	BDL	BDL	BDL	BDL				
16	Insecticide	mg/L	Absent	Absent	Absent	Absent				
17	Pesticide	mg/L	BDL	BDL	BDL	BDL				
18	Mercury as Hg	mg/L	BDL	BDL	BDL	BDL				

BDL*: Below Detection Lmit

MARINE WATER QUALITY STATUS REPORT

Sr.no.	Parameter	Unit	Jun-25	Sep-25	Dec-25	Mar-26
			MW	MW	MW	MW
1	Temperature	*C	30	30		
2	PH	-	7.92	8.31		
3	Color	Co-pt	65	55		
4	Total Suspended Solids	mg/L	2505	2436		
5	Total Dissloved Solids (TDS)	mg/L	17090	16847		
6	Chlorides as CL	mg/L	1964.6	1878.3		
7	Sulphate as SO4	mg/L	3690	3534		
8	BOD (5 days @ 20^{o}C)	mg/L	22	16		
9	COD	mg/L	80.7	77.3		
10	Oil & Grease	mg/L	BDL	BDL		
11	Phenolic Compound	mg/L	BDL	BDL		
12	Zinc as Zn	mg/L	0.172	0.164		
13	Total Chromium as Cr+3	mg/L	0.084	0.077		
14	Lead as Pb	mg/L	BDL	BDL		
15	Cyanide as CN	mg/L	BDL	BDL		
16	Flouride as F	mg/L	1.16	1.04		
17	Copper as Cu	mg/L	0.076	0.061		
18	Insecticide	mg/L	Absent	Absent		
19	Pesticide	mg/L	BDL	BDL		
20	Mercury as Hg	mg/L	BDL	BDL		
21	Hexavalent Chromium as Cr+6	mg/L	BDL	BDL		
22	Nickel as Ni	mg/L	BDL	BDL		
	BDL*: Below Detection Limit					

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.

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.

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

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 Distrcit 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

Distrcit Health Office, Bharuch to proqure 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.

(July, 2021 to December, 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 8500 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 and second batch of 20 candidates started in August, 2021 and both batches have been completed during December, 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 widow's worth of Rs. 5.87 Crs. are completed. PLL/PLF skill training partner CIPET, Ahmedabad has completed skill training of 93/100 candidates. Candidate have secured job of Rs. 10,000 per month to Rs. 15,000 per month post completion of training programme. PLL has signed agreement with Bharuch Nagarpalika to provide support for Disaster Management and Swachh Bharat Abhiyan, Bharuch Nagarpalika would procure one fire tender and Road sweeping machine with the financial support of Rs. 1.93 Cr. under PLL CSR Initiatives. PLL has signed an agreement with Gujarat CSR Authority (GCSRA) for construction of Panchayat Bhavan at Lakhigam village. PLL has supported Development of Green Zone beneath newly constructed flyover bridge at Bharuch City.

(January, 2022- June, 2022)

PLL/PLF has signed agreement with Wockhardt Foundation to run Mobile Medical Unit (MMU) in nearby villages of PLL plant area. This MMU-1 is providing its services to nearby villages like Lakhigam, Navi Nagari, Luvara, Jageshwar, Ambetha. More than 15000 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 and second batch of 20 candidates started in August, 2021 and both batches have been completed during December, 2021.This project benefited 50 disable persons with computer skill, Certificate distribution held during June, 2022. 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 widow's worth of Rs. 5.87 Crs. are completed. PLL/PLF skill training partner CIPET, Ahmedabad has completed skill training of 93/100 candidates. Candidate have secured job of Rs. 10,000 per month to Rs. 15,000 per month post completion of training programme.

PLL has singed a new agreement with CIPET, Ahmedabad to train 400 candidates in CNC Machine and Plastic Product Manufacturing. First batch of 50 candidate enrolled and initiated. PLL has signed agreement with Bharuch Nagarpalika to provide support for Disaster Management and Swachh Bharat Abhiyan, Bharuch Nagarpalika would procure one fire tender and Road sweeping machine with the financial support of Rs. 1.93 Cr. under PLL CSR Initiatives. PLL has signed an agreement with Gujarat CSR Authority (GCSRA) for construction of Panchayat Bhavan at Lakhigam village with financial support of Rs. 1.13 Crs.. PLL has supported Development of Green Zone beneath newly constructed flyover bridge at Bharuch City with financial support of Rs. 5.00 lakhs. PLL has supported development of Sports facility by Police Department, Bharuch with financial support of Rs. 5.00 lakh. PLL has supported Medical Equipments to Kasturba Hospital, Seva Rural Jhagadia with financial support of Rs. 5.00 lakh. PLL has provided support to Seva Yagaya Samiti for Strengthening of Facilities for Orphan/destitute Old Age Patients at Civil Hospital, Bharuch for Rs. 5.00 lakh. PLL has partnered with National Youth Foundation to Support for School Health Check-Up Program' at 48 Schools of Vagra Taluka, Dist. Bharuch Gujarat for Rs. 19.92 lakh.

(July, 2022- December, 2022)

PLL/PLF has signed agreement with Wockhardt Foundation to run Two Mobile Medical Unit (MMU) in nearby villages of PLL plant area. This MMU-1 is providing its services to nearby villages like Lakhigam, Navi Nagari, Luvara, Jageshwar, Ambetha. MMU-2 is providing services to Dahej, Suva, Rahiyad, Vav, Vadadla, Kadodar and Sambheti More than 30000 patients have been benefited during last six months. PLL has singed a new agreement with CIPET, Ahmedabad to train 400 candidates in CNC Machine and Plastic Product Manufacturing. First batch of 50 candidates and second batch of 45 candidates enrolled and initiated. PLL skill training partner CIPET, Ahmedabad has completed skill training of 39 candidates. Candidate have secured job of Rs. 10,000 per month to Rs. 15,000 per month post completion of training programme. PLL has signed an agreement with Gujarat CSR Authority (GCSRA) for construction of Panchayat Bhavan at Lakhigam village with financial support of Rs. 1.13 Crs. The Construction works are under progress. PLL has partnered with National Youth Foundation to Support for School Health Check-Up Program' at 48 Schools of Vagra Taluka, Dist. Bharuch Gujarat for Rs. 19.92 lakh. This programme successfully completed about 6500 students benefited from this initiative. PLL had partner with Blind People's Association and Torch It to distribute 1000 assistive devises to Divyang Jans of Gujarat State, The Project successfully completed with distribution in various interior districts of Gujarat State.

PLL has celebrated Swachhta Pakhwada 2022 with Say no to Plastic theme, distributed about 20,000 cotton bags prepared by SHGs and various awareness initiatives in local villages. PLL has celebrated Har Ghar Tiranga 2022 Abhiyan, and distributed about 10,000

National Flags prepared by SHGs in local villages. PLL has supported Installation of Dishwasher Machine at Asmita Vikas Kendra, Tralsa (Bharuch) worth of Rs. 4.75 Lakhs.

(January, 2023- June, 2023)

PLL has signed agreement with Wockhardt Foundation to run Two Mobile Medical Unit (MMU) in nearby villages of PLL plant area. This MMU-1 is providing its services to nearby villages like Lakhigam, Navi Nagari, Luvara, Jageshwar, Ambetha. MMU-2 is providing services to Dahej, Suva, Rahiyad, Vav, Vadadla, Kadodar and Sambheti More than 60000 patients have been benefited during last six months.

PLL has singed a new agreement with CIPET, Ahmedabad to train 200 candidates in CNC Machine and Plastic Product Manufacturing. PLL skill training partner CIPET, Ahmedabad has completed skill training of 110 candidates. 90% Candidates have secured job of Rs. 10,000 per month to Rs. 15,000 per month post completion of training programme.
PLL has signed an agreement with Gujarat CSR Authority (GCSRA) for construction of Panchayat Bhavan at Lakhigam village with financial support of Rs. 1.13 Crs. The Construction works are under progress.

PLL has signed an agreement with Gujarat CSR Authority (GCSRA) for construction of Govt. Primary School Building at Lakhigam village with financial support of Rs.2.41 Crs. The building plan, design and estimates preparation under progress.

PLL has signed an agreement with Vikas Centre for Development for Pond Redevelopment at Luvara village with project cost of Rs. 95.00 lakh. This project would ensure preservation of natural resources, ground water recharged and reduce salinity in this area.

PLL has signed an Agreement with Ekal Gramothan Foundation to Support Basic Computer Education in Interior Tribal Villages of Narmada and Bharuch District. About 300 youth gets trained on basic computer education.

PLL has singed an MoU with District TB Office, Bharuch and Seva Yagya Samiti for Pradhan Matri TB Mukt Bharat Abhiyan. PLL is supporting nutrition kit for 300 TB patients of Bharuch Taluka for six month with project cost of Rs. 18.00 lakh.

PLL has supported District Level Special Olympics for Special Children in Bharuch District. Every Year about 250 special children participate in 25 different sports games. Winners gets chance to represent at State and Nation event.

PLL has supported Development of Sprots Ground at Govt. High School, Lakhigam. PLL has supported women empowerment through livelihood support for Papad making Gruh udhyog. PLL has supported development of Garden and Recreation area at Luvara village. PLL has supported fisherman community in local area through distribution of Fishing Kit which is useful for seasonal fishing activities for local community.

PLL CSR & HSE Team has conducted Community Awareness Program on Industrial Safety, and Fire Safety in local Schools and Villages.

(July, 2023 – September, 2023)

PLL has celebrated Swachhta Pakhwada 2023 and conducted various awareness programs on Health and Sanitation, Medical Check ups in Schools and Villages, Swachhta Pledge, Wall Painting in villages, Nukkad Natak, Employee Quiz, Painting Competition, Reels Competition, Beach Cleaning etc. It was 15 days long celebration involving 35 stakeholders and more than 1700 participants.

PLL has extended support for flood affected area of Bharuch district by providing Mobile Medical Unit and 500 Ration Kits to District Administration, Bharuch.

PLL supported two Mobile Medical Unit in partnership with Wockhardt Foundation is providing its services in 10 nearby villages on daily basis and facilitated medical services free of cost to more than 3000 patients on monthly basis.

(October, 2023 – March, 2024)

Inaugration of 24 No. of BSF Widow Quarters at BSF Campus, Gandhinagar in presence of IG, BSF and GGM & President (Plant Head) and handedover keys to beneficiearies.

PLL supported Papad Making Unit at Lakhigam Village benefitting Self Help Group for home based employement.

PLL Supproted Distrcit Level Special Olympics, 2023 about 250 special chidlren particpated in 25 different games.

PLL faliciated by District Administration, Bharuch for supproting TB Mukt Bharat Abhiyan in Bharuch District.

PLL faliciated by Kalrav Cheritable Trust, Bharuch for supproting Special Olympics 2023.

PLL supported two Mobile Medical Unit in partnership with Wockhardt Foundation is providing its services in 10 nearby villages on daily basis and facilitated medical services free of cost to more than 3000 patients on monthly basis.

Kaushal Setu Skill Training – CIPET Ahmedabad, Sh. Sanjay Kumar GGM & President (Plant Head) PLL Dahej visted CIPET Ahmedabad and falicited candiates with certificates and employment letter. Total 176 Candidates have completed the training and received placement of Rs. 10,000 to Rs. 15,000 per month.

PLL has signed an MOA with CIPET, Ahmedabad for Kaushal Setu Skill Training, Sh. Sanjay Kumar GGM & President (Plant Head) PLL Dahej signed an MOA for residential training of 200 candidates including 50 female candidates.

(April, 2024 – September, 2024)

PLL has conducted, Free Eye and Body Check up Camps in 10 Villages of Bharuch in partnership with Mahavir Foundation,

PLL has developed recreation area (Garden) facility at Luvara village for wellbeing of community through recreation, about 2500+ community members and their children getting benefits of this facility on regular basis.

PLL has supported Construction of Shri PJ Chheda Janta Vidhyalaya at Dahej, PLL has funded development of two classroom and multimedia room facilities within school building, about 750+ students of Std. 9 to Std. 12 will be befitted through this initiative,

PLL has supported community mass marriage at Dahej village, about 45 couples participated in less expensive marriages, PLL has encourage them with providing utensils kit.

PLL has celebrated Swachhata Pakhwada 2024 involving various stakeholders like 15 villages, 12 schools, 4 NGO partners and PLL volunteers, participated in various Awareness activities, Nukkad Natak, Health Camps Competitions, Wall paintings, RO installation, School Toilet Renovation etc, about 2500+ people connected through various activities and benefitted.

Kaushal Setu Skill Training – CIPET Ahmedabad, Project competed Total 198 Candidates have completed the training and received placement of Rs. 10,000 to Rs. 15,000 per month.

PLL has signed an MOA with CIPET, Ahmedabad for Kaushal Setu Skill Training, Sh. Sanjay Kumar GGM & President (Plant Head) PLL Dahej signed an MOA for residential training of 200 candidates including 50 female candidates. About 66 Candidates are under training period.

(October, 2024 – March, 2025)

PLL Dahej CSR activities honoured by Gujarat Employer's Organisation, 2nd runner up for Year 2024-25,

Facilitation and Certificate received from Ministry of Health and Family Welfare, Govt. of India for TB Mukt Bharat Abhiyan Project,

Construction of Panchayat Bhavan, Lakhigam Village project worth Rs. 1.13 Cr, completed and handed over to Gram Panchayat,

Celebrated Swachhata Pakhwada - 2025 and Swachhata Hi Seva 2025 impacted 15+ nearby villages, 30+ stakeholders, 150+ PLL contract workers and 4000+ local community members,

Supported Community Mass Marriages for Poor families in nearby villages and impacted 100+ newly married couples

PLL Supported for Construction of School Building at Dahej (Multimedia Room and 2 No. of Classrooms) for Rs. 49 L, Project completed and impacted 750+ students of secondary and higher secondary

PLL developed recreation facility at Luvara Village impacted 1500+ local community members

PLL conducted Free Eye and Body Check ups in 10 nearby villages, impacted 5800+ community members, 887 spectacle distributed and 1000 Ration kits and sanitary pads distributed.

PLL Mobile Medical Units provided free medical services in nearby 15 villages throughout year, impacting more than 2500+ patients on monthly basis,

PLL signed an MoA with Vikas Centre for Development for Redevelopment of Pond at Luvara village for Rs. 94.00 L and 90% project have been completed.

PLL signed an MoA with CIPET : IPT Ahmedabad for Kushal Setu Skill Training Program to provide sustainable employment to 200 candidates in two years, 97/100 candidates have been trained and placed in allied industries with salary range of Rs. 15000 to Rs. 25000 per month.

(April, 2025 – October 2025)

PLL Mobile Medical Units provided free medical services in nearby 15 villages throughout year, impacting more than 2600+ patients on monthly basis,

PLL signed an MoA with Vikas Centre for Development for Redevelopment of Pond at Luvara village for Rs. 94.00 L and Project completed and handed over to Gram Panchayat, Luvara

PLL signed an MoA with CIPET : IPT Ahmedabad for Kushal Setu Skill Training Program to provide sustainable employment to 200 candidates in two years, 160/100 candidates have been trained and placed in allied industries with salary range of Rs. 15000 to Rs. 25000 per month,

Celebrated Swachhata Pakhwada - 2025 and Swachhata Hi Seva 2025 impacted 15+ nearby villages, 30+ stakeholders, 150+ PLL contract workers and 18757 local community members, students and planted 155 tree saplings

PLL has supported Distribution of Aid and Assistive Devices to Disables of Bharuch-Narmada District under CSR Initiatives, Nation Association for Blind, Bharuch has requested PLL to support about 65 Disables with Aid and Assortative Devises, it includes Joystick Wheelchair Tricycle Conventional Hand Propelled, C.P. Wheelchair With Commode, Sugamya Cane, Foldable Walker, Hearing Aid, etc,

MoA was signed between Petronet LNG Ltd. (PLL) and Gujarat Council of School Education (GCSE), Samagra Shiksha, Govt of Gujarat for Construction of School Building at Government Primary School, Ambetha

This project includes construction of new school building with a cost of Rs. 2.44 Cr., it comprise of G +2 Building, 07 no. of Rooms and toilets/urinals on each floors, This initiative would benefit 150 students of Ambetha villages by getting infrastructure support for better educational facilities,

CSR Activities Glimpse of July, 2022-December, 2022.

Widow Quarters 24 Nos. at BSF, Gandhinagar

Construction of Primary School Luvara Village

Kaushal Setu Skill Training – CIPET Ahmedabad, MOA Signed (P-III)

Mobile Health Unit (MHU) (Wockhardt Foundation)

Promote fitness and encouragement of sports activities by Police Department, Bharuch

Agreement Signed with GCSRA for Construction of Panchayat Bhavan at Lakhigam village

Swachh Bharat with Bharuch Nagarpalika

Visit of Seva Rural Jhagadiya

Distribution of 1000 Saarthi Assistive Devices to 1000 Blind persons in Gujarat State


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રાષ્ટ્રીય અંધજન મંડળ


સારથી


સારથી

Certificate Distribution for NHFDC Skill Training for Disables

Handover Old age care facility to Seva Yagya Samiti

Visit of Ashmita Vikas Kendra, Tralsa

Construction of Panchayat Bhavan, Lakhigam

Visit of IIT-Gandhinagar

Skill Development Workshop on for promotion of Art & Culture

Har Ghar Tiranga Celebrations

Free School Health Care Camps at 48 Govt, Schools of Vagra Taluka

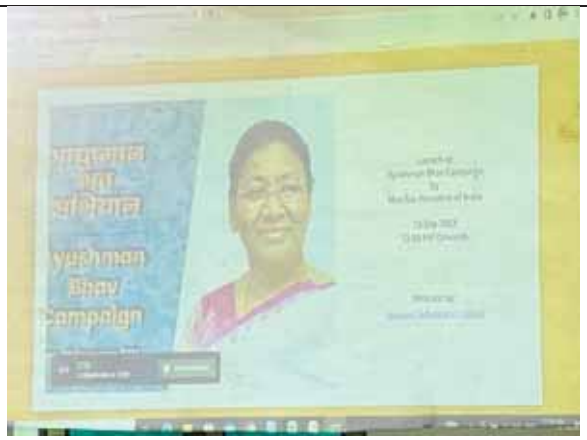
CSR Activities Glimpse from January 2023, to September, 2023.

Kaushal Setu Skill Training – CIPET Ahmedabad, MOA Signed (P-III)

Mobile Health Unit (MHU) (Wockhardt Foundation)

Ekal on Wheel, Ekal Gramothan Foundation

TB Mukt Bharat Abhiyan



Distribution of Fishing Kits at Luvara Village

MoA for Construction of Govt. Primary School, Lakhigam Village

Safety Awarness at Luvara Village

Redevelopment of Pond at Luvara Village

Swachhta Pakhwada 2023

Swachhta Hi Seva - 2023

MMU Services in Flood Affected Areas

Ration Kit Handover to District Administration, Bharuch


माखन
भोग
PETRONET
LNG
LIMITED
TATA
Salt
fortune

Inaugration of 24 No. of BSF Widow Quarters at BSF Campus, Gandhinagar

Papad Making Unit at Lakhigam Village benefitting Self Help Group for home based employement

Distrcit Level Special Olympics 2024

Falicitation for TB Project by District Administration Bharuch

Falicitation for Special Olympics Project by KALRAV Cheritable Trust Bharuch

Kaushal Setu Skill Training – CIPET Ahmedabad, MOA Signed (P-IV)

CSR Activity Glimpses: April, 2024 – September, 2024

Free Eye and Body Checkup Camps in 10 nearby Villages

Development of recreation area (Garden) at Luvara Village

Support for Construction of School Building at Dahej (Multimedia Room and 2 No. of Classrooms)

Support for Community Mass Marriage for Poor Families

Beach Cleanup Drive 25.04.2024

Beach Cleanup Drive 04.07.2024

Swachhta Pakhwada – 2024


પ્રાથમિક શાળા કસરોલ

Closing Ceremony Swachhata Pakhwada – 2024


TREE PLANTATION @DAHEJ TERMINAL

Kaushal Setu Skill Training – CIPET Ahmedabad, MOA Signed (P-IV)

Glimpse of CSR Activities : October, 2024 – March 2025

Swachhata Hi Seva – 2024

MOU Signed with Gujarat Commerce and Science Collage, Dahej

TB Mukt Bharat Abhiyan - 2025

3rd GEO CSR Award – 2025

Closing Ceremony Swachhata Pakhwada – 2025

Support for Community Mass Marriage for Poor Families, Suva Village

Tree Plantation drive on Women's Day 2025

Health Awarness drive on Women's Day 2025

Celebration of World TB Day 2025

Construction of Govt. Primary School, Ambetha Village

Support for Aid and Assistive Devices to Disables of Bharuch-Narmada District

Swachhata Pakhwada - 2025


Petronet LNG Limited
Swachhata
Pakhwada 2015

Swachhata Hi Seva – 2025

Redevelopment of Pond at Luvara Village


AGREEMENT

Annexure IV

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
0	07.09.2012	ISSUED AFTER CLIENT COMMENTS INCORPORATED	RS	TG	RKT
A	25-05-2012	ISSUED FOR CLIENT'S COMMENTS/APPROVAL	RS	TG	RKT

CONTENTS

1.0 REFERENCED PUBLICATIONS

a) **Codes and Standards:**

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	For Pressure Vessels, Heat Exchangers
ASME SEC. II	For material specification
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 0º C and (-) 165º C
BS 8110 + Amendements	Structural use of concrete
BS EN 1473	Installation and equipment for LNG-design of onshore installations
API 620	For Low Pressure Storage Tanks
API 2000	Venting atmospheric and low pressure storage tanks, Non 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 for Measurements and calibration of upright cylindrical tanks
ACI 373	Design & construction of circular prestressed concrete structures

ACI 305R	Hot weather concrete
ASTM 549	Perlite loose fill insulation
NFPA 59A	Production, storage & handling of LNG
NFPA 70	National Electric Code
NFPA 780	Standard for Installation of Lightning protection system
FIP recommandations	Acceptance and application of post tensioning system
PI-201-77	Compacted density
OISD 194	Standard for the storage and handling of LNG
IS: 875/SITE DATA	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.

Annexure:-V

Certificate of Conformity

Standard: Petroleum and Natural Gas Regulatory Board (Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP)), Regulations, 2010 and amendment 2025.

Certificate Number: **BOSAI/0786**

Certificate Holder: **Petronet LNG Limited, Dahej LNG Terminal**

Scope: **Review & implementation of ERDMP as per the PNGRB Regulations.**

This is to certify that **BOSAI SAFETY PRIVATE LIMITED**, approved TPIA by PNGRB vide Registration No. PNGRB/Tech/11-TPIA/(1)/2024 (E-4902) dated 21.03.2025 have reviewed and assessed the **ERDMP document prepared by Petronet LNG Limited, Dahej LNG Terminal** and found the same in conformity with the **Petroleum and Natural Gas Regulatory Board (Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP)), Regulations, 2010 and amendment 2025.**

The audit team conducted site assessment visit on 29.09.2025, 30.09.2025 & 01.10.2025 at **Petronet LNG Limited, Dahej LNG Terminal,** to review implementation of ERDMP as per the requirement and found the same to be compliant.

This certificate is being issued to **Petronet LNG Limited, Dahej LNG Terminal** for their compliance of ERDMP documents as per PNGRB Regulations. 2010 and amendment 2025.

Issued on:16/10/2025, Valid till:28/09/2028 (Three Years from the date of Audit)

(D.K. SINGH)
Chief Executive Officer

Note:

1. **This Certificate is valid for maximum 5 years from the date of Audit or till any major Modification/ Revamp in the facility or as per directives of PNGRB whichever is earlier.**
2. **Certificate is issued on the basis of assessment carried out and valid only with the maintaining the compliance of PNGRB regulations & OISD and other statute.**
3. **BSPL does not take any responsibility of any incident/loss occurred due to violation of any condition in future including human error on continual basis.**

Regd. Office:- 801, Tower -30, Lotus Panache, SECTOR- 110, NOIDA-201304, Mob: 9868920846, bosaisafety@gmail.com

Annexure: VI

F&G Mapping Study

PROJECT NAME	:	DAHEJ EXPANSION PHASE – IIIA LNG REGASIFICATION FACILITIES
OWNER	:	PETRONET LNG LTD

	AP
	AP

TABLE OF CONTENTS

o/c

Annexure- VII

Petronet LNG Limited

GIDC Industrial Estate, Plot No. 7/A, Dahej,
Taluka : Vagra, Dist. Bharuch (Gujarat) - 392 130 (India)
Tel.: 02641 - 670200 / 257
www.petronetlng.com
CIN: L74899DL 199PLCO93073

Ref.: PLL/DHJ/HSE/GPCB/2025/02

Date: April 11, 2025

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 2024 to March 2025

Dear Sir,

Enclosed Please find Environmental Statement (FORM – V) for the financial year April 2024 to March 2025 for your kind perusal.

Thanking you,
Yours faithfully,

Authorized Signatory
For Petronet LNG Limited

Sanjay Kumar
Plant Head
Petronet LNG Limited
Dahej-392130

Encl: As above

16/4/25
Post Received
Gujarat Pollution Control Board
BHARUCH

Copy to:
Gujarat Pollution Control Board, Bharuch

FORM-V
ENVIRONMENTAL STATEMENT
(See rule 14)

Environmental Statement for the financial year ending with **31st March 2025**

PART - A

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

Mr. Sanjay Kumar
GGM & President (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 capacity – Dahej Unit.

20 MMTPA (Million Metric Tons per Annum) Regasification Capacity

Receipt of LNG through Ship, Storage, Regasification and Dispatch of RLNG and LNG

iv. Year of establishment: **2nd April, 1998**

v. Date of the last environmental statement submitted: 22nd April 2024

PART - B

Water and Raw Material Consumption:

i. Water consumption in m^3/d:

Process	: Nil
Cooling	: Nil
Domestic	: Average 4 m3/day water intake from GIDC for use of domestic purpose. Average 133 m3/day water reused for domestic purpose from condensate water generation.

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

ii. Raw material consumption:

Name of raw materials*	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year (F.Y. 2023-24)	During the current financial year (F.Y. 2024-25)
1. Liquefied Natural Gas (LNG)	RLNG	16.0303 MMTPA 21849.39 MMSCM of send out RLNG	16.06 MMTPA 21998.48 MMSCM of send out RLNG
MMSCM = Million Metric Standard Cubic Meter MMTPA = Million Metric Ton per Annum			

* 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)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water	No process effluents generated	Not Applicable	Not Applicable
(b) Air			
• Stack emissions from Gas Turbine Generator	----	PM : BDL** SO_2 : BDL NOx : 18.4 ppm	Concentration of pollutants discharged is well within the GPCB norms.
• EDG Stacks	----	PM : 75 mg/Nm3 SO_2 : 32 ppm NOx : 38 ppm	

** BDL= Below detection limit

PART - D
HAZARDOUS WASTES

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

Hazardous Wastes (Disposed)	Total Quantity (Kg)	
	During the previous financial year (F.Y. 2023-24)	During the current financial year (F.Y. 2024-25)
1. From Process	Nil	Nil
2. From Pollution Control Facilities	Nil	Nil
3. Used oil	2295 Liters	3921 Liters
4. Waste Residue containing Oil	860 Kgs	1020 Kgs
5. Insulation Waste	5660 Kgs	2550 Kgs
6. Paint Waste	Nil	760 Kgs
7. Contaminated Empty carboys, barrels and drums	491 Nos (1152 Kgs)	436 Nos (1373 Kgs)

PART- E

SOLID WASTES

Solid Wastes	Total Quantity (Kg)	
	During the previous financial year (F.Y. 2023-24)	During the current financial year (F.Y. 2024-25)
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	1890 Kg	1560 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 :

- 3921 Liters Used oil disposal through GPCB approved Recycler/ Preprocessor, M/s S B Lubricants , Panjaroli, Taluka Hansot, Bharuch
- 760 Kgs Paint waste dispossed to approved incineration site of M/s BEIL Infrastructure Ltd, Dahej for icineration process

Solid Waste :

- 1020 Kgs Waste residue containg oil(Cotton waste) dispossed to approved incineration site of M/s BEIL Infrastructure Ltd, Dahej for incineration process.
- 436 Nos (1373 Kgs) Contaminated Empty barrels, drums, carboys are send to approved decontamination facility of M/s Vikas Enterprise, Jaghadia and M/s Maa Enterprise, Ankleshwar
- 2550 Kgs Insulation waste dispossed to M/s BEIL Infrastructure Ltd, Dahej.

E-Waste : Total 1560 Kg E - waste dispossed to GPCB approved agency , M/s Globe E Waste Management (Earlier known as Earth E Waste Managemnet Pvt. Ltd.)

Used Batteries: Total 71 nos batteries are disposed off as per Batteries Waste Management Rules, 2022.

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.

PART – H

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. Total lawns/ green cover developed & maintained till date is 30000 Sq.m. In addition to this, 75000 Sqm Area of Green Belt has been developed at Kaladara, Near Ganpatpura, Aliabet, Hansot Taluka, Dist. Baruch.

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.
13	2021-22	76.26	Development & maintenance of Green belt during the year.
		155.34	STP Installation
14	2022-23	74.65	Development & maintenance of Green belt during the year.
		7.76	STP Operation and Maintenance cost
15	2023-24	76.11	Development, maintenance of Green belt during the year
		558.73	Mangrove plantation and Green belt development outside PLL
		7.76	STP Operation and Maintenance cost

16	2024-25	86.21	Development & maintenance of Green belt during the year
		467.67	Mangrove plantation - outside PLL
		943.98	Green belt development - outside PLL
		19.31	STP Operation and Maintenance cost
Total		**3331.15**	

PART- I

Any other particulars for improving the quality of the environment.

Total 2250 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. 100 ha.	AnkalvaVillage, Hansot, Bharuch RoniyaBhatha, Nr. Nirma, Bhavanagar	Gujarat Ecology Commission (GEC) , Govt. of Gujarat 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
9	2023-24	100 ha.	Paniyadra Village, Dahej, Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
10	2023-24	200 ha.	Kentiyajal, Hansot Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
11	2024-25	200 ha.	Katpore, Hansot Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
12	2024-25	325 ha.	Dahej, Vagra, Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
13	2024-25	175 ha.	Paniyadra, Vagra, Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
14	2024-25	100 ha.	Ishanpur, Jambusar, Bharuch	Bharuch Forest Sub-Division, Govt. of Gujarat
	Total	**2250 ha.**		

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

Name: Sanjay Kumar
Designation: GGM & President (Plant Head)
Address: M/s Petronet LNG Limited,
Plot.7/A, GIDC Industrial Estate,
Dahej, Taluka Vagra, Bharuch – 392130
Ph. 02641-670299/201

Sanjay Kumar
Plant Head
Petronet LNG Limited
Dahej-392130

Annexure VIII

UNITED INDIA INSURANCE COMPANY LIMITED

D-24 & E-25, HIMALAYA HOUSE 23, K G MARG, NEW DELHI NEW DELHI, NCR, DELHI
NEW DELHI - 110001 DELHI
PHONE: (11) 23318077 FAX: EMAIL:

PUBLIC LIABILITY ACT POLICY
Policy No.:5003002725P104410078

PERIOD OF INSURANCE
From 00:00 hrs of 02/06/2025
To midnight of 01/06/2026

Insured

M/s PETRONET LNG LIMITED.

WORLD TRADE CENTRE, 1ST FLOOR, BABAR ROAD, BARAKHAMBA LANE, NEW DELHI
NEW DELHI
110001
DELHI

Agent Name	**:**
Agent Code	**:**
Mobile/Landline Number/Email	**:**

The genuineness of the policy can be verified through "Verify Your Policy" link at www.uiic.co.in.

For any Information, Service Requests, Claim intimation and Grievances please write to 500300@uiic.co.in

PUBLIC LIABILITY ACT POLICY
SCHEDULE

Policy No.	5003002725P104410078	Prev. Pol. No.					
Name Of Insured/ID	**M/s PETRONET LNG LIMITED./23167513100**						
Tel.(O)		Fax		Tel.(R)		Mobile	
Business/Occupation	None			Email			
Period of Insurance	From 00:00Hours of 02/06/2025		To Midnight of 01/06/2026				

CO-INSURANCE DETAILS:

Company Name	Office Code	Leader(L)/Non-Leader(N)	Share(%)
UIIC	500300	L	40
TNIA	930000	N	30
NICL	240400	N	30

PREMIUM: FIVE LAKHS RUPEES ONLY

Location: LNG Terminal at Dahej, State of Gujarat, Kochi, State of Kerala and LNG Stations at Tamil Nadu & Karnataka.

Territory(Geographical Limits)/Jurisdiction:-

Territory	Jurisdiction	Details	Description
India	India	Anywhere in India	Anywhere in India

Subsidiaries:-

Excess/Deductible:-

Compulsory Excess/Deductible:-₹0.00

Voluntary Excess/Deductible:-₹0.00

TRANSPORTATION OF CHEMICALS

INDEMNITY LIMIT		
Any One ACCIDENT	:	₹ 2,500,000,000.00
Aggregate During the Policy Period (Not exceeding three Times of any one accident of Indemnity Limit)	:	₹ 5,000,000,000.00
Contribution to environment Relief fund	:	₹ 500,000.00
Other Discount Amount	:	₹ 3612084.99

Estimated Annual turnover	
Proposed Year	Previous Year
475770000000	470000000000

Premium	:₹	500,000.00
CGST(9%)	:₹	45,000.00
SGST(9%)	:₹	45,000.00
Stamp duty	:₹	0.00
Total	:₹	**1,090,000.00**
Receipt Number	:	10150030025105689451
Receipt Date	:	17/06/2025

Agency/Broker Code:	
EMF Code:	28467

Underwriting Remarks	All other terms and conditions will be as per Tender No. PLLDELFI000402025

Customer GST/UIN No.:	07AAACP8148D1ZI	**Office GST No.:**	07AAACU5552C1ZL
SAC Code:	997139	**Invoice No. & Date:**	2725I104410078 & 17/06/2025
Amount Subject to Reverse Charges-NIL			

We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.

Anti Money Laundering Clause:-In the event of a claim under the policy exceeding ₹ 1 lakh or a claim for refund of premium exceeding ₹ 1 lakh, the insured will comply with the provisions of AML policy of the company. The AML policy is available in all our operating offices as well as Company's web site.

LET US JOIN THE FIGHT AGAINST CORRUPTION. PLEASE TAKE THE PLEDGE AT https://pledge.cvc.nic.in.

Extension Names	LIMIT OF INDEMNITY (₹) AOA : AOY
Indemnity Cover	2500000000:5000000000

Underwriting Remarks	All other terms and conditions will be as per Tender No. PLLDELFI000402025

Date of Proposal and Declaration: 02/06/2025

IN WITNESS WHEREOF, the undersigned being duly authorised has hereunto set his/her hand at

LCB DELHI 500300 on this 10th day of June ,2025

For United India Insurance Co. Ltd.

Affix Policy Stamp here.

Authorised Signatory.

LIABILITY INSURANCE POLICY
(UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

1. OPERATIVE CLAUSE

Whereas the Insured Owner named in the Schedule hereto and carrying on business described in the said Schedule has applied to the UNITED INSURANCE COMPANY LIMITED(hereinafter called the "Company")for the indemnity hereinafter contained and has made a written proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein and has paid the premium and statutory contributions towards the Environmental Relief Fund as per the provision of the Public Liability Insurance Act, 1991 and the rules framed there under,as amended from time to time..

NOW THIS POLICY WITNESSETH that subject to the terms, exceptions and conditions contained herein or endorsed herein, the Company will indemnify the Insured Owner against the statutory liability arising out of accidents occurring during the currency of the Policy due to handling hazardous substances as provided for in the said Act and the Rules framed thereunder as amended from time to time.

2. DEFINITIONS:

a) "ACT" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act 1991 as amended from time to time.

b) "Accident" means an accident involving a fortuitous sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radioactivity.

c) "Handling" in relation to any hazardous substance means the manufacture processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substances.

d) "Hazardous Substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986 and exceeding such quantity as may be specified, by notification by the Central Government;

e) "Owner" means a person who owns, or has control over handling any hazardous substance at the time of accident and includes:

i) in the case of a firm, any of its partners;
ii) in the case of an association, any of its members and
iii) in the case of a company, any of its directors, managers, secretaries or other officers who is directly in charge of, and is responsible to the company for the conduct of the business of the company;

f) "Turnover" shall mean

i) manufacturing units- Annual Gross Sales of all goods including all levies and taxes
ii) Godowns/ Warehouse owners - Total Annual rental receipts
iii) Transport Operators - Total Annual freight receipts
iv) Others - Total Annual gross receipts.

3. EXCLUSIONS:

This Policy does not cover liability;

1. arising out of wilful or intentional non-compliance of any Statutory provisions.

2. in respect of fines, penalties, punitive and / or exemplary damages.

3. arising under any other legislation except in so for as provided for in Section 8 Sub-Section (1) and (2) of the "Act".

4. in respect of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured Owner's control, care or custody.

5. directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not) civil war, rebellion, revolution, insurrection or military or usurped power;

6. directly or indirectly caused by or contributed to by:

a) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel;
b) the radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.

4. CONDITIONS:

1. The Insured Owner shall give written notice to the Company as soon as reasonably practicable of any claim made against the Insured Owner or of any specific event or circumstance that may give rise to a claim. The Insured Owner shall immediately give to the Company copies of notice of application forwarded by the Collector and all such additional information and or assistance that the Company may require.

2. No admission, offer, promise or payment shall be made or given by or on behalf of the Insured Owner under this Policy without the written consent of the Company.

3. The Company shall not be liable for any claim for relief made after five years from the date of occurrence of the accident.

4. The Insured Owner shall keep record of annual turnover, and at the time of renewal of insurance declare such turnover and all other details as may be required by the Company. The Company shall at all reasonable times have full rights to call for and examine such records.

5. If at the time of happening of any accident resulting in a claim under this Policy there be any other insurance covering the same liability then the Company shall not be liable to pay or contribute more than its rateable proportion of such liability.

6. This Policy may be cancelled by the Insured Owner by giving 30 days' notice in writing to the Company in which event the Company will retain the premium at short period scale of rates subject to there not having occurred an accident during the Policy period which may give rise to a claim(s), failing which no refund of premium shall be allowable.

7. This insurance may be terminated at any time at the request of the Insured, in which case the Company will retain the premium at customary short period rate for the time the policy has been in force. This insurance may also at any time be terminated at the option of the Company, on 15 days' notice to that effect being given to the Insured, in which case the Company shall be liable to repay on demand a rateable proportion of the premium for the unexpired term from the date of the cancellation. In either case premium will be refunded only if there is no claim under the policy
8. If the Company shall disclaim liability to the Insured Owner for any claim hereunder and if such claim shall not within 12 calendar months from the date of such disclaimer have been made the subject matter of a suit in a competent court of law, then the claim for all practical purposes shall be deemed to have been abandoned and shall not thereafter be recoverable hereunder or be made the subject matter of any suit.

9. The Company shall not be liable to make any payment in respect of any claim if such claim shall be in any manner fraudulent or supported by any person on behalf of the Insured Owner and/or if the Insurance has been continued in consequence of any material misstatement or non disclosure of any material information by or on behalf of the Insured Owner. In such a case if the Company pays any amount to the claimant due to any Statutory provision, such amount shall be recoverable from the Insured Owner.

10. The Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been assigned in the Act and the Rules framed thereunder or under this Policy shall bear such specific meaning.

11. Any dispute regarding interpretation of the terms, conditions and exceptions of this Policy shall be determined in accordance with the law and practice of a court of competent jurisdiction within India.

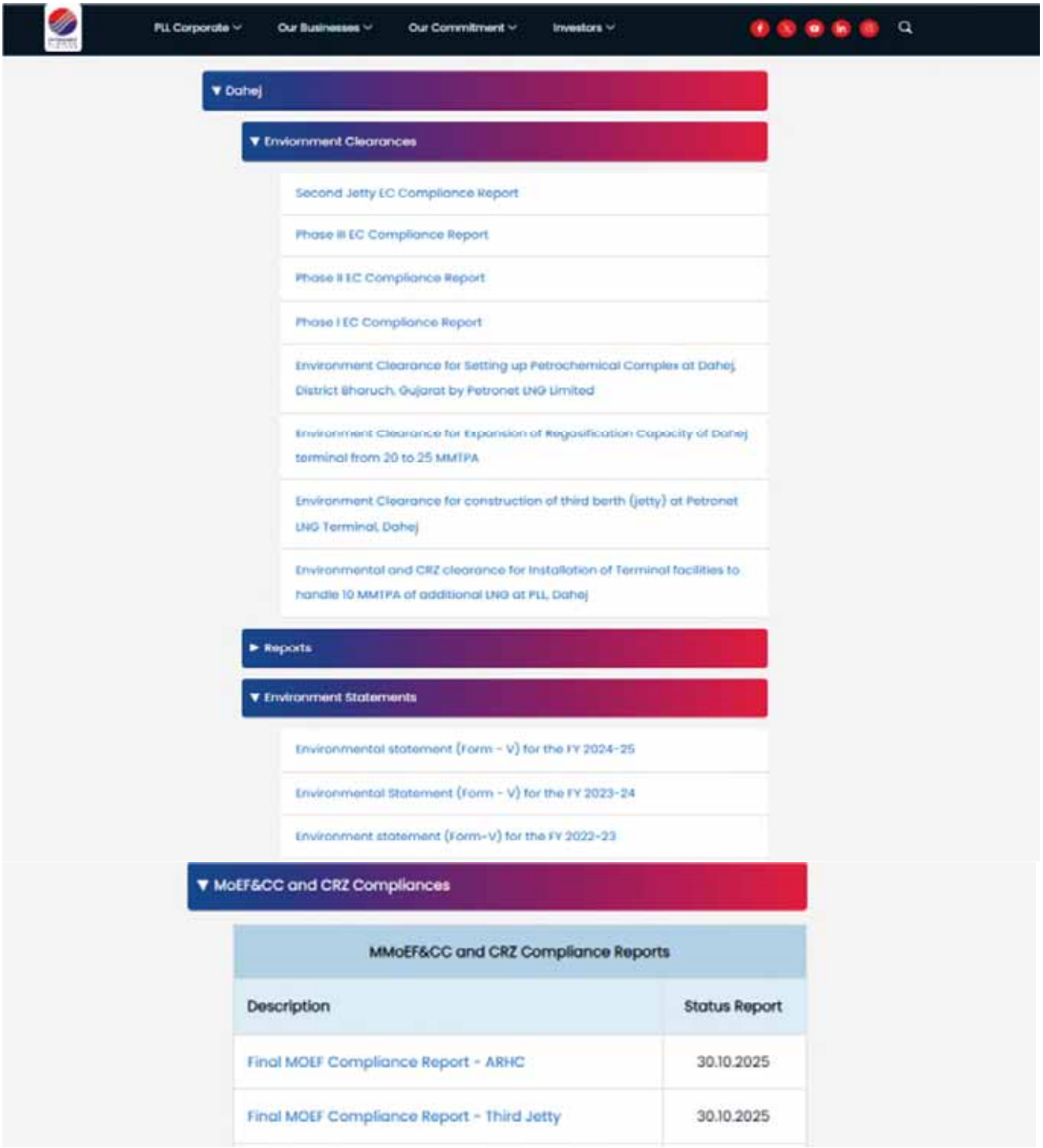
Communicable Disease Exclusion Clause:
1. Notwithstanding any provision, clause or term of this insurance contract to the contrary, this insurance Contract excludes any loss, cost, damage, liability, claim, fines, penalty or expense or any other amount of whatsoever nature, whether directly or indirectly and/or in whole or in part, related to, caused by, contributed to by, resulting from, as a result of, as a consequence of, attributable to, arising out of, arising under, in connection with, or in any way involving (this includes all other terms commonly used and/or understood to reflect or describe nexus and/or connection from one thing to another whether direct or indirect):
1.1 a Communicable Disease and/or the fear or threat (whether actual or perceived) of a Communicable Disease and/or the actual or alleged transmission of a Communicable Disease regardless of any other cause or event contributing and/ or occurring concurrently or in any sequence thereto, and
1.2 a pandemic or epidemic, as declared by the World Health Organisation or any governmental authority.
2. As used herein, Communicable Disease means: any infectious, contagious or communicable substance or agent and/or any infectious, contagious or communicable disease which can be caused and/or transmitted by means of substance or agent where:
2.1 the disease includes, but is not limited an illness, sickness, condition or an interruption or disorder of body functions, systems or organs, and
2.2 the substance or agent includes, but is not limited to, a virus, bacterium, parasite, other organism or other micro-organism (whether asymptomatic or not); including any variation or mutation thereof, whether deemed living or not, and
2.3 the method of transmission, whether direct or indirect, includes but not limited to, airborne transmission, bodily fluid transmission, transmission through contact with human fluids, waste or the like, transmission from or to any surface or object, solid, liquid or gas or between organisms including between humans, animals, or from any animal to any human or from any human to any animal, and
2.4 the disease, substance or agent is such:
2.4.1 that causes or threatens damage or can cause or threaten damage to human health or human welfare, or
2.4.2 that causes or threatens damage to or can cause or threaten damage to, deterioration to, contamination of, loss of value of, loss of marketability of or loss of use or usefulness of, tangible or intangible property. For avoidance of doubt, Communicable Disease includes but is not limited to Coronavirus Disease 2019 (Covid -19) and any variation or mutation thereof.
3. For further avoidance of doubt, any contingent or other business interruption loss, cost, damage, loss of income, loss of use, increased cost of working and/or extra expense arising out of or attributable to:
3.1 any partial or complete closure of and/or slowdown in, including but not limited to any closure by or under the advisories of public, military, government or civil authorities, or any denial of access to insured premises, or customer and or supplier premises (including service / utility providers), or

3.2 change in consumer behaviour, or
3.3 an absence of infected employees or employees suspected of being infected shall not be covered by this insurance Contract. .
4. For still further avoidance of doubt, loss, cost, damage, liability, claim, fines, penalty or expense or any other amount excluded hereby, includes but is not limited to any cost to identify, clean-up, detoxify, disinfect, decontaminate, mitigate, remove, evacuate, repair, replace, monitor, sanitize or test: (1) for a Communicable Disease or (2) any tangible or intangible property covered by this [insurance Contract] that is affected by such Communicable Disease.
5. It is clarified that (1) no other prior, concurrent or subsequent provision, clause, term or exception of this insurance Contract (including (but not limited to) any prior, concurrent or subsequent endorsement and/or any provision, clause, term, buy back or exception that operates, or is intended to operate, to extend the coverage of, or protections provided by, this insurance Contract] by whatever name called like any coverage extension, additional coverage, global extension, exception to any exclusion); (2) any change in the law, clause or similar provision; (3) any follow the fortunes clause or similar provision; and/or (4) no change in the law or any regulation (to the extent permitted by applicable law), shall operate to provide any insurance, coverage or protection under this insurance Contract that would otherwise be excluded through the exclusion set forth in this [Endorsement][Clause].
6. If the insurer alleges that by reason of this [Endorsement][Clause] any amount is not covered by this insurance Contract the burden of proving the contrary shall rest in the insured.

Pandemic /Epidemic Specific Exclusion Clause:
Notwithstanding any provision, clause or term of this Contract, this insurance Contract excludes any first party and/or third party actual or alleged loss, injury, sickness, disease, death, medical payment, defence cost, cost, damage, liability, claim, fines, penalty, compensation, expenses or any amount of whatsoever nature, whether directly or indirectly and/or in whole or in part, arising out of (this includes all other terms commonly used and/or understood to reflect or describe, direct or indirect nexus and/or connection between one thing and another), intentional or unintentional violation of
a. The provisions of Disaster Management Act, 2005 as amended from time to time
b. The provisions of The Epidemic Diseases Act 1897 as amended from time to time
c. The provisions of any act dealing with public health and/or public safety
d. The rules, regulations, orders, guidelines, policies, notification etc issued from time to time under any of the above acts.

'Policy form - Claims made with right to defend.'

Annexure IX Upload of Half Yearly Returns on Company Website



Annexure X

Mangroves Plantation Details

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

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

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

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

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

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

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

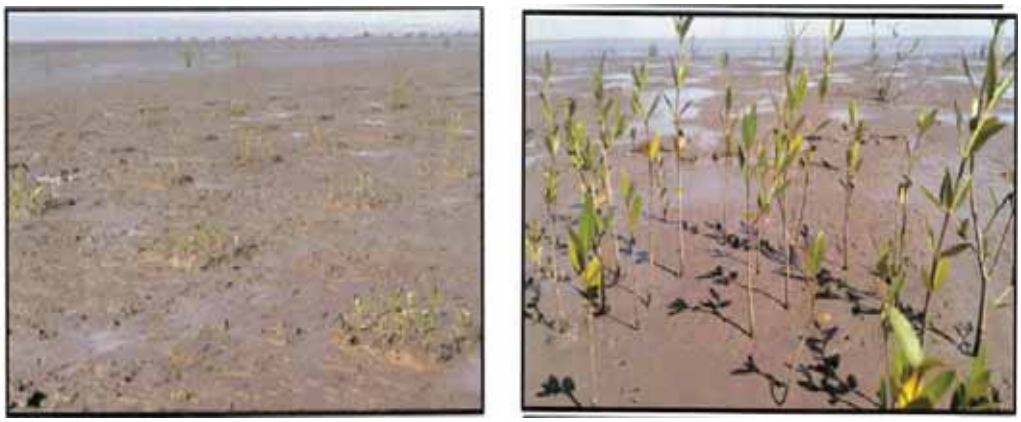
Mangroves planted in 50 ha. area at Gadhula, Talaja Coast during 2016-17

Mangroves planted in 200 ha. area at at Kantiyajal Coast during 2023-24

Mangroves planted in 100 ha. area at at Paniyadra Coast during 2023-24

Mangroves planted in 200 ha. area at at Katpore Coast during 2024-25

Mangroves planted in 100 ha. area at at Ishanpur Coast during 2024-25



Mangroves planted in 175 ha. area at at Paniyadra Coast during 2024-25

Mangroves planted in 325 ha. area at at Dahej Coast during 2024-25

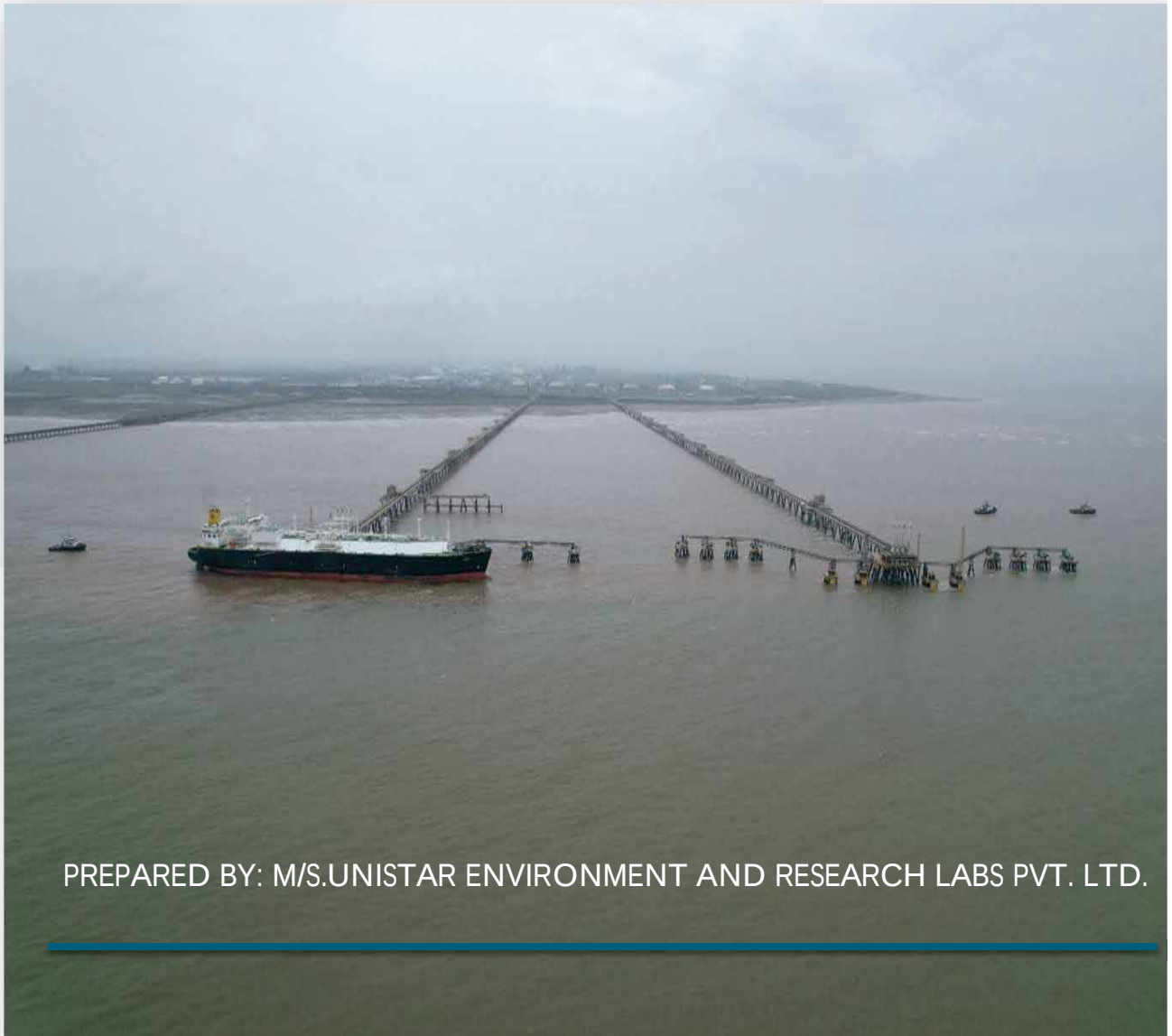
Annexure XI

MARINE ECOLOGICAL MONITORING REPORT

FOR

M/s.PETRONET LNG LIMITED., DAHEJ

JUNE 2025



PREPARED BY: M/S.UNISTAR ENVIRONMENT AND RESEARCH LABS PVT. LTD.

PREFACE

The Company had set up South East Asia's first LNG Receiving and Regasification Terminal with an original nameplate capacity of 5 MMTPA at Dahej, Gujarat. The infrastructure was developed in the shortest possible time and at a benchmark cost. The capacity of the terminal has been expanded in phases which is currently 17.5 MMTPA and the same is under expansion to 22.5 MMTPA in two phases. The terminal has 8 LNG storage tanks and other vaporization facilities. In FY 2023-24, PLL handled around 74% of the country's total LNG imports and catered to around 34% of the total natural gas consumption in the country.

The terminal has two LNG Jetties at Dahej. While the first jetty can handle the berthing of up to Q-Flex vessels, the second jetty can handle the berthing of up to Q-Max vessels. Dahej Terminal is the largest single-location LNG storage and regasification terminal in the country handling 3538 LNG cargoes till 30th September 2024. The terminal is also offering tolling services to Offtakers & Bulk customers. To cater the small customers who do not have gas pipeline connectivity, Dahej is supplying LNG to such customers which is transported through cryogenic trucks.

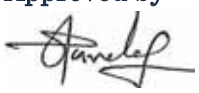
PLL Dahej is the first terminal to start loading LNG in trucks for the supply of LNG to the areas where pipelines have not been reached and today has 04 truck loading bays and a hub for the development of small-scale LNG business. PPL has entrusted the work of carrying out Marine Ecological Monitoring to **M/s.UniStar Environment and Research Labs Pvt. Ltd.**

These Marine Ecological Monitoring reports provide data obtained from monitoring and analysis activities undertaken on the date 07.06.2025. (June-2025)

Date: 30/06/2025

M/s.UniStar Environment and Research Labs Pvt. Ltd.
White House, Char Rasta, Vapi-396 191

Approved by



Manager - Operations
(Jaivik Tandel)

TABLE OF CONTENTS

❖ INTRODUCTION

1.1 Background:

Marine Ecological Monitoring involves the Physico-chemical and biological analysis of Marine water. Marine water quality of Sub-tidal and Intertidal regions, Flora and Fauna analysis in marine water area and Benthos in inter-tidal and sub-tidal analysis for the Petronet LNG Ltd. (Dahej LNG Terminal). Water samples are collected from different location (station) and Benthos sample are collected from High water and low-water transect areas. Samples are brought to the laboratory by the field sampling team and the analysis was carried out in our laboratory and the results are presented in this report.

1.2 Objectives:

The primary objectives of this study are,

a) To evaluate the physico-chemical parameters of seawater for better understanding of water quality in study region.
b) To assess the marine biological status of the study region with quantitative and qualitative data of marine organisms (phytoplankton, zooplankton, and macrobenthos).
c) To recommend adequate marine environmental management measures.

1.3 Scope of work

Sample collection on spatial basis for the Petronet LNG Ltd. (Dahej LNG Terminal) to evaluate the following parameters:

a) Mrine Biological Water quality sample analysis from subtidal region

Water quality will be assessed for Temperature, pH, Turbidity, Total suspended solids, salinity, Oil & grease, Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Calcium Carbonate, Alkanity, Petroleum Hydrocarbons (PHc), Total Phosphate, Nitrate, Ammonical nitrogen, Total nitrogen and Total coliform.

b) Biological Analysis of collected sample with respect to phytoplankton, zooplankton and Chlorophyll from subtidal region

c) Sampling of benthic communities from subtidal region between Low tide and high tide

d)Intertidal flora/fauna Qualitative and quantitative estimations: phytoplankton, pollutation and generic diversity,primaery productivity, zooplankton standing stock, miceobenthic standing stock subtidal region,sea grass,algae,sea weeds,crustaceans,fishes mangroves and migratory birds etc.

1.4 Sampling strategy

To evaluate the influence of activity at the Petronet LNG Ltd. (Dahej LNG Terminal), sedimentary parameters and marine biota present sampling was carried out on dated.07.06.2025

Table 1: Co-ordinates of subtidal and intertidal sampling stations

Stations			Co-ordinates	
Sub-tidal (ST)	ST-1	HTL	21°40.880'N	72°29.807'E
		LTL	21°40.887'N	72°29.948'E
	ST-2	HTL	21°39.867'N	72°29.799'E
		LTL	21°39.880'N	72°29.790'E
	ST-3	HTL	21°39.100'N	72°29.800'E
		LTL	21°39.055'N	72°29.801'E
	ST-4	HTL	21°38.130'N	72°30.432'E
		LTL	21°38.020'N	72°30.587'E
Intertidal (IT)	IT-01		21°40.572'N	72°30.921'E
	IT-02		21°40.559'N	72°30.586'E
	IT-03		21°40.128'N	72°30.950'E
	IT-04		21°39.896'N	72°30.629'E

a) Sampling frequency:

All Sampling subtidal stations were monitored during flood to ebb. Water samples were collected in Triplicate (surface, Middle and bottom) for assessing water quality and marine biological characteristics.

Intertidal sampling was completed during low tide, for assessed Macro benthic fauna samples were collect in duplicate from each transects.

Figure 1. Sampling locations of Subtidal and intertidal at M/s.Petronet LNG Limited., Dahej Terminals

b) Sampling methodology:

➢ Water quality: Surface water samples were collected using the clean polyethylene bucket. Niskin water sampler (5-liter capacity) with a mechanism for closing at a desired depth using messenger was used for collecting sub-surface (bottom) water samples (~1m above the sea floor).

➢ Sediment sampling: For estimation of sedimentary parameters samples were collected from subtidal stations using Van-Veen type grab (area of 0.1 m^2), while intertidal samples were collected using metal quadrant (0.25 m^2 area).

➢ Biological characteristics: Samples for chlorophyll and phytoplanktons were collected using clean plastic bucket and Niskin water samples. The samples for chlorophyll were immediately preserved with ice and kept in ice box till further analysis whereas the phytoplankton samples were fixed with Lugol's iodine and few drops of 3% buffered formaldehyde solutions, while for zooplankton oblique hauls were made at water surface using Heron Tranter net (mesh size 0.20 mm, mouth area 0.05 m^2) attached with calibrated flow meter (General Oceanic). The samples were preserved in 5% buffered formaldehyde solutions. Samples for macrobenthos were collected using Van-Veen type of grab covering an area of 0.1 m^2 and sieving through 500 µm mesh size. The samples were preserved with 5% formaldehyde Rose Bengal solutions.

1.5 Team Members

The marine Ecological Monitoring work presented in this report is done by M/s. UniStar Environment and Research Labs Pvt. Ltd. With active co-operation from M/s. Petronet LNG Ltd. for this Marine Ecological Sampling and Analysis UERL team members are as follows.

- **Sampling team members:**

1. Dr. Sushant Vilas Sanaye (Marine Scientist)
2. Mr. Pravin Singh (Environmental Engineer)
3. Mr. Vijay Thanki (Environmental Chemist)

- **Laboratory members**

1. Dr. Sushant Vilas Sanaye (Marine Scientist)
2. Ms. Ayushi Rathod (Sr. Microbiologist)
3. Mr. Nilesh Patel (Sr. Chemist)

❖ WATER QUALITY

2.1 Marine Water quality:

Seawater samples have been collected during June 2025.

2.2 Physico chemical Water analysis result:

All the water sampled, which is collected by the sampling team is brought to the lab for Physico chemical analysis. The marine water quality at different collected stations are measured during this investigation is presented in Table No.2.1 and its method of analysis is present in Table No.2.0

Table: 2.0 Methodology of Physico chemical Water Analysis

Sr.No.	Parameters	Test Method
1	pH @ 25 °C	IS 3025 (Part 11)1983
2	Temperature (^{0}C)	IS 3025 (Part 9)1984
3	Turbidity	IS 3025 (Part 10)1984
4	Total Suspended Solids	IS 3025 (Part -17)
	CHEMICAL QUALITY	
1	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44)1993
2	Oil & Grease	IS 3025 (Part 39) 2021
3	Ammonical Nitrogen	IS 3025 (Part-34)
4	Salinity	By Calculation
5	Dissolved Oxygen	IS 3025 (Part -38)
6	Total Alkalinity as $CaCO_3$	IS 3025 (Part 23)1986
7	Phosphate	APHA 24th Edition: 4500- P D
8	Nitrate	APHA 24th Edition: 4500- NO_3 B
9	Nickel as Ni	IS 3025 (Part-54)
10	Calcium Carbonate	APHA 24th Edition: 3500-Ca B
11	Petroleum Hydrocarbon (PHc)	GC Method
	MICROBIOLOGY QUALITY	
1	Total Coliform	APHA 24th Edition: 9222-B

Table: 2.1 Physico chemical Water Analysis Result

Sr.No.	Parameters	Unit	Station 1			Station 2		
			Surface	Middle	Bottom	Surface	Middle	Bottom
PHYSICAL QUALITY								
1.	pH @ 25 °C	--	8.20	8.10	8.10	8.11	7.98	7.94
2.	Temperature	(^{0}C)	30	29.5	28.8	29.5	29.2	28.7
3.	Turbidity	NTU	5	5	1	10	10	1
4.	Total Suspended Solids	(mg/l)	238	198	162	231	211	178
CHEMICAL QUALITY								
1.	Biochemical Oxygen Demand	mg/L	2.6	2.2	1.9	2.2	2.0	1.5
2.	Oil & Grease	mg/L	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)
3.	Ammonical Nitrogen	mg/L	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)
4.	Salinity	ppt	33.9	32.4	31.2	33.4	35.7	34.3
5.	Dissolved Oxygen	mg/L	6.7	6.4	6.2	6.6	6.4	6.3
6.	Total Alkalinity as $CaCO_3$	mg/L	164.0	158.9	148.6	143.5	138.4	148.6
7.	Phosphate	mg/L	0.24	0.26	0.22	0.28	0.30	0.33
8	Nitrate	mg/L	0.7	0.8	1.0	0.7	0.8	0.7
9	Nickel as Ni	Mg/L	BDL	BDL	BDL	BDL	BDL	BDL
10	Calcium Carbonate	mg/L	717.8	688.7	737.2	911.8	921.5	902.1
11	Petroleum Hydrocarbon (PHc)	ppb	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MICROBIOLOGY QUALITY								
1.	Total Coliform	CFU/ 100ml	28	Absent	Absent	21	Absent	Absent

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable

Table: 2.2 Physico chemical Water Analysis Result

Sr.No.	Parameters	Unit	Station 3			Station 4		
			Surface	Middle	Bottom	Surface	Middle	Bottom
PHYSICAL QUALITY								
1.	pH @ 25 °C	--	8.10	7.97	7.94	8.16	7.95	7.94
2.	Temperature	(^{0}C)	29.4	28.8	28.4	29.3	28.9	28.8
3.	Turbidity	NTU	5	1	1	10	10	1
4.	Total Suspended Solids	(mg/l)	228	216	182	238	234	187
CHEMICAL QUALITY								
1.	Biochemical Oxygen Demand	mg/L	2.4	2.1	1.6	2.8	2.3	1.9
2.	Oil & Grease	mg/L	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)	BDL (MDL:5.0)
3.	Ammonical Nitrogen	mg/L	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)	BDL (MDL:2.0)
4.	Salinity	ppt	34.8	33.0	38.8	31.8	32.4	30.3
5.	Dissolved Oxygen	mg/L	6.6	6.4	6.2	6.7	6.3	6.0
6.	Total Alkalinity as $CaCO_3$	mg/L	138.4	143.5	143.5	143.5	153.7	153.7
7.	Phosphate	mg/L	0.38	0.35	0.41	0.36	0.31	0.33
8	Nitrate	mg/L	0.8	0.7	0.6	0.8	0.7	0.8
9	Nickel as Ni	Mg/L	BDL	BDL	BDL	BDL	BDL	BDL
10	Calcium Carbonate	mg/L	921.5	950.6	911.8	640.2	659.6	805.1
11	Petroleum Hydrocarbon (PHc)	ppb	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MICROBIOLOGY QUALITY								
1.	Total Coliform	CFU/ 100ml	18	Absent	Absent	12	Absent	Absent

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable

❖ BIOLOGICAL CHARACTERISTICS (BIODIVERSITY STUDIES):

Marine ecosystems are subject to a multitude of direct human pressures, such as overexploitation, eutrophication, pollution, and species introductions. These stressors can have synergistic effects on marine ecosystems, altering their functioning. Anthropogenic involvements constantly compromise the health of the marine ecosystem by disturbing the ecological balance. Hence the assessment of the biotic components along with abiotic factors is an integral part of environmental assessment and monitoring study. During the present investigation at Petronet LNG, Dahej, the abundance and distribution of marine organisms (Plankton and benthos) were studied as part of routine environmental monitoring.

3.1 Planktonic Forms:

The name plankton is derived from the Greek word “planktons”, meaning “wanderer” or “drifter”. While some forms of plankton are capable of independent movement and can swim up to several hundred meters in a single day, their position is primarily determined by currents and light in the body of water they inhabit. As per definition, organisms classified as "plankton" are unable to resist ocean currents. Plankton is primarily divided into two broad functional groups i.e., Phytoplankton and Zooplankton.

3.1.1 Phytoplankton

Phytoplankton are microscopic, single-celled photosynthetic organisms that live suspended in all water niches, including oceans, freshwater, and marine niches. Like the terrestrial ecosystem where plants are an integral part of the ecosystem, phytoplankton play key role in the biogeochemistry of the oceans. As they are dependent on sunlight for energy, they mostly inhabit the euphotic zone. Therefore, they are responsible for the production of half of the atmosphere’s oxygen and more than half of the primary production in the oceans. There are many species of phytoplankton, each of which has a characteristic shape, size, and function. Marine species of phytoplankton grow abundantly in oceans around the world and are the foundation of the marine food chain. Marine phytoplankton are the producing (autotrophic) component in the ocean. There are fourteen classes of phytoplankton. Each class of phytoplankton contains unique attributes in size, cell structure, nutrients, and function.

3.1.2 Zooplankton:

Zooplankton occupies second position in the food web of the marine niche. They are the primary consumer’s organisms and generally feed on phytoplankton or small, microscopic group of organisms for they are nutritional needs. They are incapable of making their own food from sun-light or inorganic compounds, and feed on organisms or the remains of other organisms to get the energy necessary for survival.

- SIGNIFICANCE OF PHYTO- AND ZOOPLANKTONS

Phytoplankton are vital to marine ecosystems. They are producers, or autotrophs, that form the foundation of most marine food webs. As photosynthetic organisms, they can convert solar energy into chemical energy and store it in form of sugars. They are responsible for half of the photosynthetic activity on the planet. The significance of zooplanktons is found in their role of transferring biological production from phytoplankton to large organisms in the marine food web and the seafloor. The microscopic protozoan, tunicates, copepods, and other crustaceans graze upon many phytoplankton species. These in turn become food for other animals further linking the food web. Therefore, variability in reproduction of copepods would affect the survival of young fish that feeds on them.

Table 3: Test methods for phytoplankton, Zooplankton, Chlorophyll a and Pheophytin, Macro benthos analysis

Sr. no.	Test performed	Method
1	Phytoplankton	APHA, Edition 24th, Part 10000, 10200 F
2	Chlorophyll *a* and Pheophytin	APHA, Edition 24th, Part 10000, 10200 H (with some modification)
3	Zooplankton	APHA, Edition 24th, Part 10000, 10200 G
4	Macro benthos	APHA, Edition 24th, Part 10000,10500 A-10500 D

3.2 ZOOPLANKTON DIVERSITY

Zooplankton includes arrays of organisms, varying in size from the microscopic protozoans of a few microns to some jellyfish-like organisms with tentacles several meters long. By virtue of sheer abundance and intermediate role between phytoplankton and fish, zooplankton is considered as the chief index of the utilization of aquatic biotopes at the second trophic level.

Zooplankton standing stock in terms of population and biomass revealed substantial variation within all Subtidal (4 stations) and inter-tidal (4 stations) stations (Table 4 and Table 5) in the study area of Petronet LNG jetty, Dahej during June 2025. In the sub-tidal area, the maximum zooplankton population density (17590 nos./100 m^3) and biomass (3.99 ml/ 100 m^3) was recorded at Station 4 during high tide level and minimum zooplankton population density (10000 nos./100 m^3) and biomass (3.29 ml/100 m^3) were recorded at Station 2 during low tide level (Figure 1). In the inter-tidal area, the maximum zooplankton population density (11948 nos./100 m^3) and biomass (3.33 ml/100 m^3) were recorded at Station IT-1 and the minimum zooplankton population (10021 nos./100 m^3) and biomass (3.36 ml/100 m^3) were recorded at Station IT-3 (Figure 2). A total of 13 groups of zooplankton including

Copepods, Copepod nauplii, crab larvae, Chaetognaths, Lucifers, Decapod larvae, fish and shellfish eggs, fish larvae, gastropod larvae, Polychaetae larvae, Siphonophora, Ostracods and Oikopleura were identified during this study (Table 4 and 5). Among these identified groups Copepods (76.27%) and Copepod nauplii (12.26%) were most dominant (Figure 3). Crab larvae (2.74%), Chaetognaths (2.12%) and fish and shell fish eggs (2.25%) were also the dominant groups in the zooplankton population (Figure 3). As well as Lucifers, Decapods (shrimps), polychaetae larvae also were another observed group during the present study. During the zooplankton sample collection, biomass of collected zooplankton was high due to the occurrence of fish larvae and decapod shrimps in the samples.

Table 4: Population (nos./100 m³) and biomass (ml/100 m³) of various zooplankton groups in the sub-tidal area at the Petronet LNG, Dahej during June 2025.

Zooplankton Groups	High Tide level				Low Tide level			
	St-1	St-2	St-3	St-4	St-1	St-2	St-3	St-4
Copepods	12578	11729	12046	12381	9172	8987	7552	9936
Copepod nauplii	2552	2264	2467	2972	1403	1080	1217	1305
Crab larvae	703	617	419	559	304	394	221	220
Chaetognaths	523	459	306	431	231	277	194	236
Lucifers	180	127	145	96	101	146	97	94
Decapod (shrimps)	131	95	177	256	174	102	152	126
Fish and shell fish eggs	343	364	435	383	275	219	263	189
Fish larvae	33	47	48	64	29	29	0	16
Gastropod larvae	49	63	65	144	72	58	69	63
Polychaete larvae	65	32	97	80	58	73	55	31
Siphonophora	49	79	48	96	87	44	55	47
Ostracods	16	16	32	48	72	29	69	31
Oikopleura	98	47	48	80	87	44	55	31
Population (nos./100 m³)	**17322**	**15940**	**16335**	**17590**	**12065**	**11482**	**10000**	**12326**
Biomass (ml/100 m³)	**3.68**	**3.17**	**2.42**	**3.99**	**3.16**	**3.28**	**3.29**	**3.44**

Table 5: Population (nos./100 m³) and biomass (ml/100 m³) of various zooplankton groups in the inter-tidal area at the Petronet LNG, Dahej during June 2025.

Zooplankton Groups	Inter tidal stations			
	IT-1	IT-2	IT-3	IT-4
Copepods	9409	8299	7977	9447
Copepod nauplii	1322	1001	830	963
Crab larvae	228	177	277	207
Chaetognaths	198	162	169	163
Lucifers	137	74	108	89
Decapod (shrimps)	137	88	138	118
Fish and shell fish eggs	243	309	246	252
Fish larvae	30	15	46	44
Gastropod larvae	46	44	46	44
Polychaete larvae	61	44	61	30
Siphonophora	61	29	46	44
Ostracods	46	59	31	44
Oikopleura	30	44	46	59
Population (nos./100 m³)	**11948**	**10344**	**10021**	**11506**
Biomass (ml/100 m³)	**3.33**	**2.94**	**3.36**	**3.70**

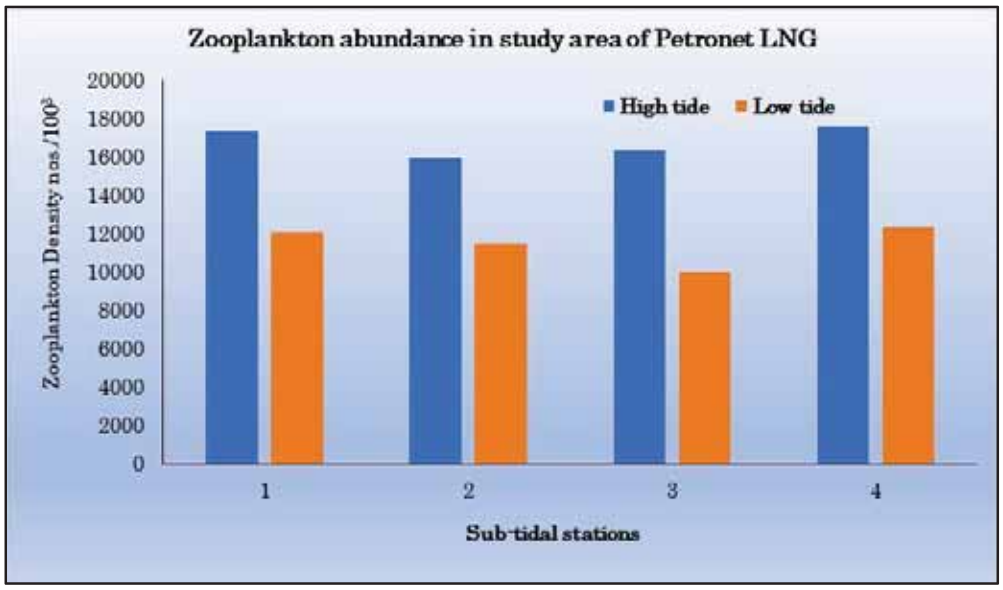


Figure 1: Zooplankton population (nos./100 m³) recorded in the sub-tidal waters along the Petronet LNG, Dahej during June 2025.

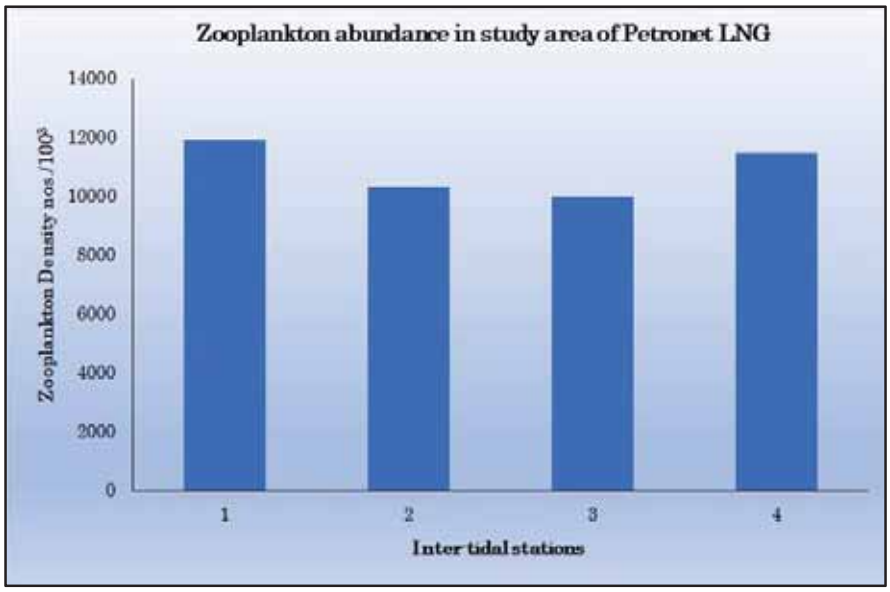


Figure 2: Zooplankton population (nos./100 m³) recorded in the inter-tidal waters along the Petronet LNG, Dahej during June 2025.

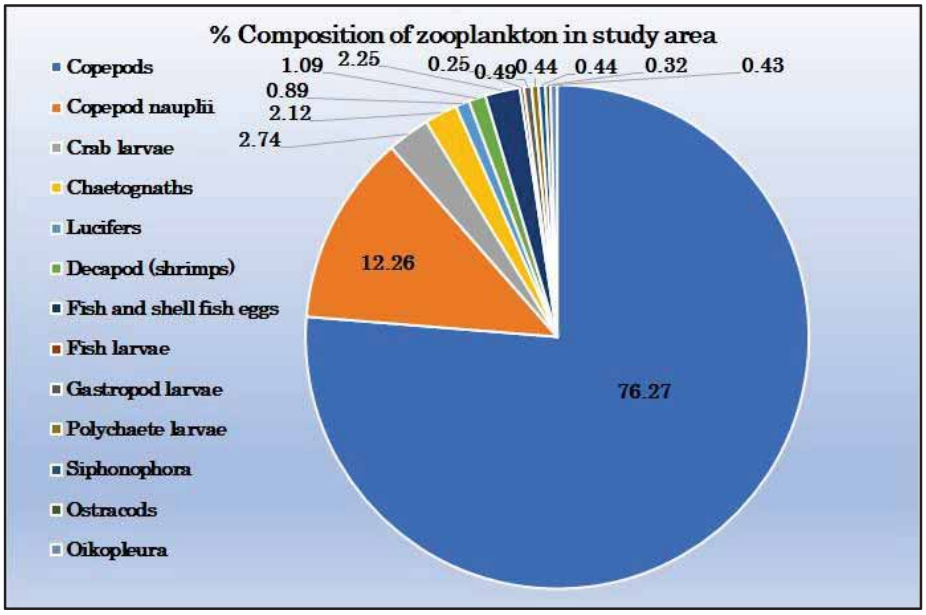


Figure 3: Dominant groups of Zooplankton reported from study area of Petronet LNG, Dahej during June 2025.

Copepod

Copepod Nauplii

Fish larvae

Decapod shrimps

Figure 4: Microphotographs of zooplanktons reported in the coastal waters of Petronet LNG, Dahej during June 2025

3.3 MACRO-BENTHIC FAUNA

The benthic zone is the lowest ecological zone of a water body, which usually involves the sediments on the seafloor. The number of phyla and species of benthic animals exceeds those of pelagic species, at least partly because of the greater physical variety of benthic habitats. Benthic animals are separated into in faunal and epifaunal species, depending upon whether they live within sediments or on the surface of the seafloor, respectively. Size categories of the zoobenthos consist of the larger macrofauna (>1.0 mm), the small meiofauna which is characteristically found in sand and mud, and the microfauna which is made up mostly of protozoans.

Benthic organisms are morphologically different from those planktonic organisms. Many are adapted to live on the substrate (bottom). In benthic habitats, they can be considered dominant creatures.

These organisms adapted to deep-water pressure so cannot survive in the upper parts of the water column. Since light does not penetrate very deep ocean water, the benthic organisms often depend on the organic matter falling from the upper water column as their main energy source. This dead and decaying matter sustains the benthic food chain. The most benthic organisms are scavengers or detritivores. These organisms under being relatively stationary, are constantly exposed to changes undergoing in overlying water, and hence, respond very well to aquatic pollution. The macro benthos population is very sensitive to environmental perturbation and is highly influenced by the physicochemical characteristics of water, the nature of the substratum, food, predation, and other factors. The density of benthic invertebrates also fluctuates widely with the changes in the season.

- **Significance of macrobenthic organisms**

The biomass of macrobenthic organisms in estuaries and coastal embayment is often high. Burrowing and tube-building by deposit-feeding benthic organisms (bioturbations) help to mix the sediment and enhance the decomposition of organic matter. Nitrification and denitrification are also enhanced because a range of oxygenated and anoxic micro-habitats are created. Macro fauna is also important constituents of fish diets and thus are an important link for transferring energy and nutrients between trophic levels, also driving pelagic fish and crustacean production. For these reasons, the benthic organisms are extremely important indicators of environmental change.

3.4 BENTHIC DIVERSITY

3.4.1 Subtidal region:

During the present study, macrobenthos abundance and biomass were recorded at sub-tidal stations during high and low tide levels at Petronet LNG, Dahej (Table 6). The macrobenthos density ranged from 380 nos./m^2 to 430 nos./m^2 at sampling stations (Table 6; Figure 5) and comprising of 4 different groups (Mollusks, Sipuncula, Annelids and Foraminifera). The biomass of the macrobenthic community in the study region ranged from 1.65 g/m^2 to 1.78 g/m^2. The maximum abundance of benthic microorganisms was reported at Station 1 (430 nos./m^2) during high tide levels and mainly contributed by the dominance of polychaete worms. The highest biomass of macrobenthic species was observed at Station 1 (1.78 g/ m^2) during high tide levels with the dominance of Polychaetas. The least density (380 no/m^2) and biomass (1.65 g/m^2) was observed at Station 2 during low tide level. In species composition, Retaria is the first largest group observed at all the stations during the present study whereas Annelida is the second largest comprises Polychaete species (Phylum Annelida) belonging to the family Paraonidae, Pilargidae, Capitillidae, Cossuridae, Spionidae, Nereidae, Eunicidae, were abundant. Secondly, bivalve & gastropod molluscs and sipunculids were present at all the sampled stations.

Table 6: Faunal composition, density (nos./m²) and biomass (g/m²) of the macrobenthos community in the sub-tidal region at Petronet LNG, Dahej during June 2025.

Benthos Faunal Groups	High tide Level				Low tide Level			
	St-1	St- 2	St- 3	St- 4	St- 1	St- 2	St- 3	St- 4
Phylum Mollusca								
Bivalves and gastropods	20	20	10	20	40	30	20	30
Phylum Sipuncula								
Sipunculids	20	20	10	10	20	20	30	10
Nemertine	20	30	20	10	20	30	20	20
Phylum Annelida								
Polychaetes	190	180	140	150	160	150	160	140
Phylum Retaria								
Foraminifera	180	170	210	190	180	150	160	190
Density (nos./ m²)	**430**	**420**	**390**	**380**	**420**	**380**	**390**	**390**
Biomass (gm/m²)	**1.78**	**1.69**	**1.68**	**1.68**	**1.69**	**1.65**	**1.68**	**1.70**

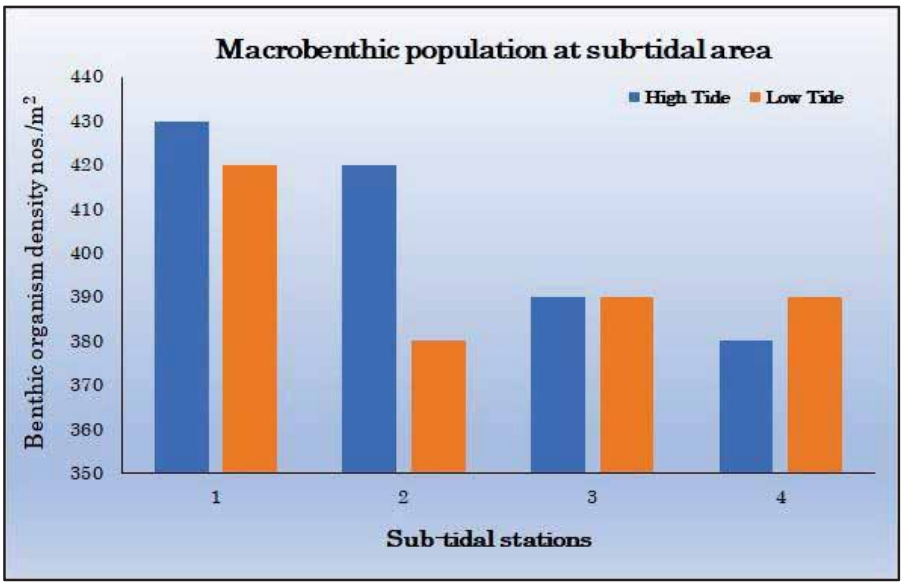


Figure 5: Subtidal macrobenthos abundance (nos./m²) during high tide and low tide at different sampling stations at Petronet LNG, Dahej during June 2025.

3.4.2 Intertidal region:

The muddy and sandy substratum with moderate organic matter supports the occurrence of the microbenthic community in the intertidal region. The macrobenthos biomass was measured in between 430 g/m² to 480 g/m² in the intertidal region at the Petronet LNG, Dahej (Table 7). The lowest density and biomass of macrobenthic organisms were reported at station IT-2 (430 nos./m² and 1.72 g/m², respectively), whereas the highest density was reported at Station IT-1 (480 nos./m² and 2.20 g/m², respectively) (Table 7 and Figure 6). In the inter-tidal area, Foraminifera (40.48%) and Polychaete (39.39%) species were contributed to the total macrobenthic abundance at these stations followed by bivalves and gastropods (7.66%). Some photographs of benthic fauna are shown in Figure 8.

Table 7: Faunal composition, density (nos./m²) and biomass (g/m²) of the macrobenthos community in the inter-tidal region at Petronet LNG, Dahej during June 2025.

Benthos Faunal Groups	Inter-tidal stations			
	IT-1	IT- 2	IT- 3	IT- 4
Phylum Mollusca				
Bivalves and gastropods	30	40	40	30
Phylum Sipuncula				
Sipunculids	10	10	0	20
Nemertine	20	10	10	20
Phylum Annelida				
Polychaetes	190	180	160	190
Phylum Arthropoda				
Decapod larvae (crab)	40	30	30	30
Phylum Retaria				
Foraminifera	190	160	210	180
Density (nos./ m²)	**480**	**430**	**450**	**470**
Biomass (gm/m²)	**2.2**	**1.72**	**1.81**	**1.9**

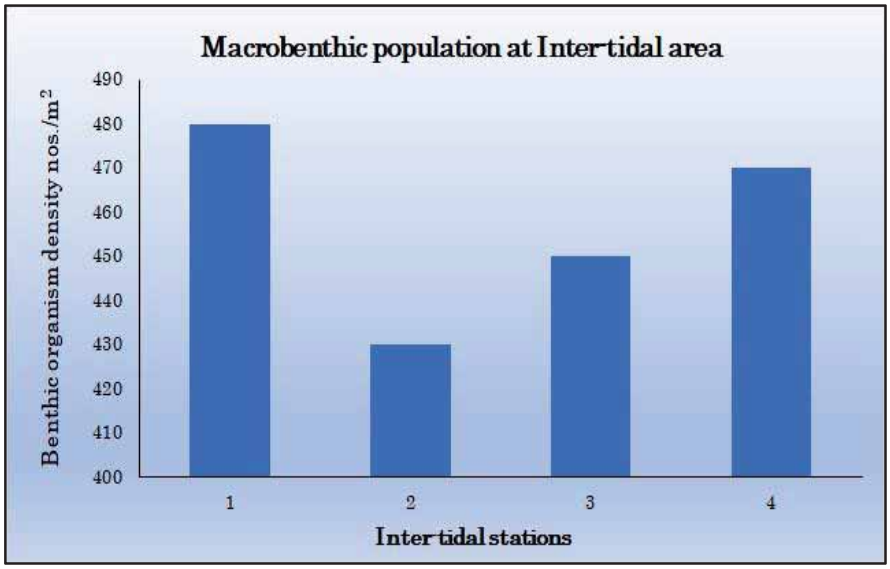


Figure 6: Inter-tidal macro benthos abundance (nos./m²) at different sampling stations at Petronet LNG, Dahej during June 2025.

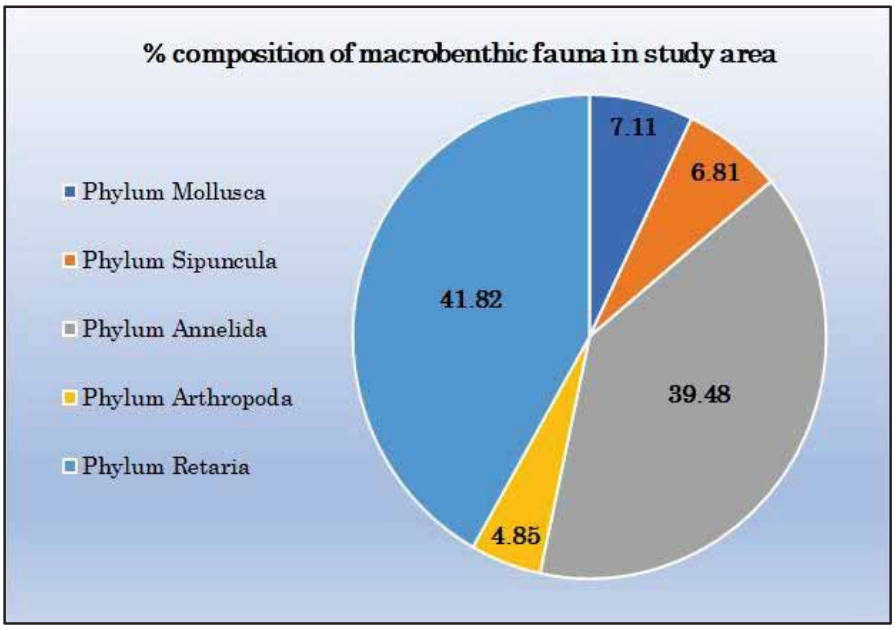
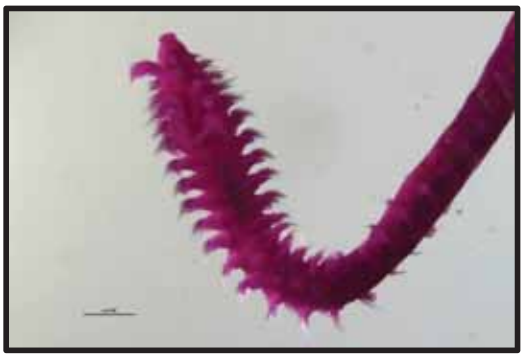


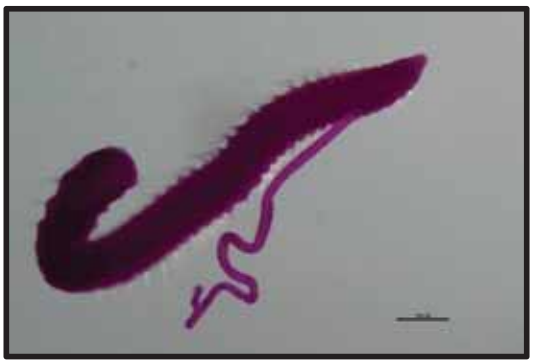
Figure 7: Percent composition of Subtidal benthic taxa from the marine waters of Petronet LNG, Dahej during June 2025

Capitallidae



Spoinidae

Pilargidae



Cossuridae

Figure 8: Microphotographs of microbenthic organisms observed in the sediment samples collected in the vicinity of Petronet LNG, Dahej during June 2025

3.5 AVIFAUNAL DIVERSITY

Due to their importance in the ecosystem for various roles such as scavengers, pollinators for crops, seeds dispersal agents and also predators of insect pests, the avifaunal diversity study of a given region is a major indicator to evaluate habitats both qualitatively and quantitatively. Due to anthropogenic activities along with climate changes, the global diversity of birds is rapidly decreasing. IUCN Red List of endangered birds has already recognized 1226 bird species as threatened globally and whereas, 88 bird species are found in India.

Coastal and estuarine waters are always been important habitats for many bird species, including many migratory birds. Mudflats and sandy beaches are important feeding grounds for coastal birds and nearby mangrove forests and land trees provide shelter and breeding habitats. During the present study, an overview of the avifaunal diversity present in the study area has been taken. Due to the restricted approach to mudflats and shores directly for security reasons, only available bird species are listed in Table 8.

Table 8: List of bird species observed in the study area.

Sr. No.	Scientific name	Common name	IUCN category
1.	*Actitis hypoleucos*	Common sandpiper	Least concern (LC)
2.	*Ardeola grayii*	Indian pond Heron	Least concern (LC)
3.	*Bubulcus ibis*	Cattle egret	Least concern (LC)
4.	*Casmerodius albus*	Great egret	Least concern (LC)
5.	*Columba livia*	Rock dove	Least concern (LC)
6.	*Charadrius leschenaultii*	Sand plover	Least concern (LC)
7.	*Egretta gularis*	Western reef egret	Least concern (LC)
8.	*Larus heuglini*	Heuglin's gull	Least concern (LC)
9.	*Milvus migrans*	Black kite	Least concern (LC)
10.	*Vanellus indicus*	Red-wattled Lapwing	Least concern (LC)
11.	*Psittacula sp.*	Indian parakeet	Least concern (LC)
12.	*Aerodramus sp.*	Indian swiftlet	Least concern (LC)

Most of the bird species were observed foraging in the inter-tidal mud flats during low tide. Rock doves and Indian parakeets were observed to make nests in jetties and building structures. All the avifaunal species found in the study area are common in appearance and in the least concern (LC) category of the IUCN red list of threatened species.

3.6 MANGROVES

Mangroves are a very specialised group of plants found only in the transitional zone between land and the sea. The mangrove species are adapted to the salty water, less oxygen in sediments as well as daily tidal variation. The mangrove species developed a special kind of roots called 'Pneumatophores' which enables them for intake of air for plants in the water-filled muddy soil. These breathing roots help mangrove trees to absorb oxygen from air and therefore thrive them into oxygen less muddy soil.

Mangrove plants generate a variety of natural resources and ecosystem services that are vital to subsistence economies and sustain local and national economies. During many natural calamities like cyclones, storm surges, heavy flooding and tsunamis they act as barriers and protect the land from erosion and reduce the effect on living resources. The value of mangroves as a carbon sink (absorb 4-5% more CO_2 than terrestrial trees) and the efficiency with which they can remove carbon from the atmosphere put them center stage in the context of increasing global concerns about climate change and sea level rise. They also maintain the stability of the shoreline and prevent the release of toxic

wastes into the coastal waters. The mangrove ecosystem is also a rich of nutrients in the coastal waters. The falling leaves from the mangrove area become the primary source of a food chain, which goes on to feed microorganisms, larvae and the adults of many invertebrates and fishes. These roots also harbor the number of fish species which use this area as their breeding grounds. It is estimated that over 70% of commercially important fishes depend on mangroves for their nutrient cycle and nursery breeding. This fish reach habitat attracts the number of birds and animals in the area thus making the mangroves a biodiversity reach habitat.

During the present study, scattered patches of mangroves mainly *Avicennia* species were found towards the northwest side of Petronet LNG jetties. All observed patches are shrub type and may be because of the high tidal amplitude in the Gulf of Khambhat and absence of adequate muddy habitat.

3.7 PHYTOPLANKTON DIVERSITY:

The phytoplankton are vast array of minute and microscopic plants passively drifting in natural waters and mostly confined to the illuminated zone. In an ecosystem these organisms constitute primary producers forming the first link in the food chain. The phytoplankton have long been used as indicators of water quality. Some species flourish in highly eutrophic waters, while others are very sensitive to organic and/or chemical wastes. Because of their short life cycles, plankton responds quickly to environmental changes. Hence, their standing crop in terms of biomass, cell counts and species composition are more likely to indicate the quality of the water mass in which they are found. Phytoplankton composition also varies considerably. Thus, a very few species may be overwhelmingly common during blooms, while a large number of species may occur without clear dominance under normal conditions.

Phytoplankton sampling was carried out at 4 stations from three levels i.e., Surface, Middle and Bottom at HTL (High Tide Level), LTL (Low Tide Level) and IT (Intertidal zone). During the sampling period (June 2025) the phytoplankton population in the coastal waters of Petronet LNG, Dahej was diverse and represented with a total of 37 phytoplankton genera (Table 9) belonging to diatoms (31 genera) and dinoflagellates (6 genera). Diatoms Species belonged to *Amphora* sp., *Amphorprora* sp., *Asterionella* sp., *Bacillaria* sp., *Chaetoceros* sp. *Corethron* sp., *Coscinodiscus* sp., *Cyclotella* sp., *Cylindrotheca* sp., *Cymbella* sp., *Diploneis* sp., *Ditylum* sp., *Guinardia* sp., *Gyrosigma* sp., *Lauderia* sp., *Leptocylindrus* sp., *Licmophora* sp., *Lithodesmium* sp., *Navicula* sp., *Nitzschia* sp., *Odontella* sp., *Paralia* sp., *Pinnularia* sp., *Pleurosigma* sp., *Pseudo-nitzschia* sp., *Rhizosolenia* sp., *Streptotheca* sp. *Synedra* sp., *Thalassiosira* sp., *Thalassionema* sp. and *Thalassiothrix* sp.

The phytoplankton abundance in the study region was ranged from 76 to 198 cells×10^2/L (Table 9, Figure 9) at HTL. The highest phytoplankton abundance was observed at Station 4 in the surface (198 nos.×10^2/L) and lowest at Station 2 in bottom water (76 nos.×10^2/L). The phytoplankton abundance was ranged from 77 to 165 nos.×10^2/L (Table 9, Figure 9) at LTL. The highest phytoplankton abundance at LTL was (165 nos.×10^2/L) was observed at Station 4 in surface water and lowest was at station 2 bottom water (77 nos.×10^2 /L). The phytoplankton abundance was ranged from 124 to 132 nos.×10^2/L (Table 9, Figure 9) at Intertidal zone. The highest phytoplankton abundance at IT was (132 nos.×10^2/L) was observed at Station 1 and lowest was at station 2 (124 nos.×10^2 / L). The study shows that the marine water around was enriched with the diverse phytoplankton population.

Table 9: Phytoplankton abundance (cells×10²/L) at different sampling stations during High Tide Level (HTL) in the coastal waters of Petronet LNG, Dahej during June 2025.

Note: S=surface; M= Middle; B=bottom; HTL= High Tide Level; St=station

Phytoplankton Genera	Sampling Stations (HTL)											
	St-1			St-2			St-3			St-4		
	S	M	B	B	M	B	S	M	B	S	M	B
Diatoms												
Amphora sp.	1	0	0	3	2	1	2	2	1	3	3	2
Amphorprora sp.	1	0	0	2	1	1	2	1	0	5	3	1
Asterionella sp.	6	3	3	2	2	1	5	3	1	7	5	3
Bacillaria sp.	4	1	0	4	3	2	3	1	1	5	2	2
Chaetoceros sp.	2	1	0	1	1	0	1	0	0	2	1	1
Corethron sp.	3	1	0	2	2	1	1	0	0	1	1	0
Coscinodiscus sp.	42	31	21	31	25	23	33	20	18	45	29	28
Cyclotella sp.	2	0	1	1	1	1	2	1	1	2	2	1
Cylindrotheca sp.	2	1	1	0	0	0	3	3	1	3	1	1
Cymbella sp.	1	0	0	0	0	0	3	1	1	1	0	0
Diploneis sp.	3	2	1	2	1	1	2	1	0	3	2	1
Ditylum sp.	5	3	2	1	1	1	3	2	2	5	5	4
Guinardia sp.	3	1	3	2	2	2	3	3	2	2	2	1
Gyrosigma sp.	2	0	0	1	1	1	2	3	1	2	1	0
Lauderia sp.	3	1	1	1	1	1	3	2	1	1	2	1
Leptocylindrus sp.	3	2	1	2	1	1	2	2	2	1	1	1
Licmophora sp.	2	3	2	1	1	1	1	0	0	2	1	0
Lithodesmium sp.	4	1	1	1	0	0	1	1	0	3	2	2
Navicula spp.	12	9	7	9	6	6	19	14	14	21	18	15
Nitzschia spp.	15	12	10	13	12	10	18	16	11	16	11	8
Odontella sp.	3	2	1	1	0	0	2	1	0	3	2	2
Paralia sp.	0	0	0	1	1	1	4	3	3	1	1	0
Pinnularia sp.	2	1	0	1	1	1	3	1	0	3	1	0
Pleurosigma spp	4	3	1	2	1	1	5	3	2	5	2	2
Pseudo-nitzschia sp.	2	2	1	2	2	2	4	3	2	1	2	0
Rhizosolenia sp.	11	10	9	8	7	5	12	11	9	11	9	7
Synedra sp.	2	1	1	1	1	1	1	1	0	1	1	0
Streptotheca sp.	0	0	0	1	1	0	2	1	0	2	2	1
Thalassionema sp.	7	9	8	8	4	4	9	6	4	23	17	14
Thalassiosira sp.	2	1	0	3	3	2	1	2	0	1	0	0
Thalassiothrix sp.	1	0	0	0	0	0	1	0	0	0	0	0
Dinoflagellates												
Ceratium sp.	3	4	3	3	2	2	5	4	3	5	4	3
Gymnodinium sp.	1	0	0	1	1	1	2	1	0	3	3	2
Prorocentrum sp.	1	0	0	2	0	0	1	2	2	1	1	0
Protoperidinium sp.	2	2	2	2	2	1	4	3	3	6	5	5
Pyrophacus sp.	0	0	0	1	1	1	1	1	0	1	0	0
Scrippsiella sp.	1	0	0	1	1	0	1	0	0	1	0	0
Total Phytoplankton (nos. x 10²/L)	**158**	**107**	**80**	**117**	**91**	**76**	**167**	**119**	**85**	**198**	**142**	**108**

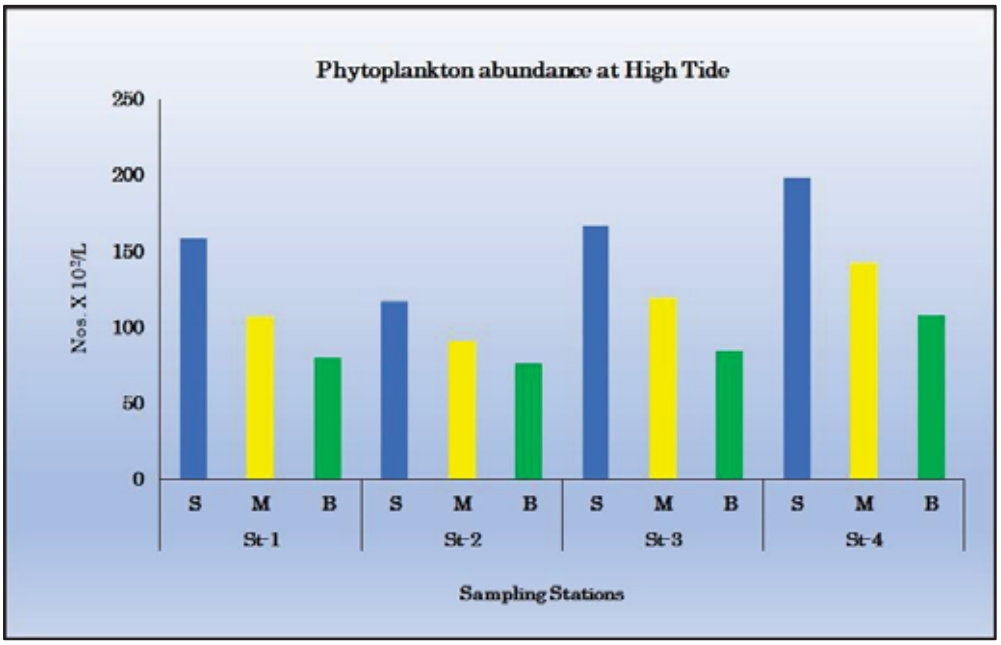


Figure 9: High Tidal Level (HTL) phytoplankton abundance (nos. x10²/ L) at different sampling stations at Petronet LNG, Dahej during June 2025

Table 10: Phytoplankton abundance (cells×10²/L) at different sampling stations during Low Tide Level (LTL) in the coastal waters of Petronet LNG, Dahej during June 2025.

Note: S=surface; M= Middle; B=bottom; LTL= Low Tide Level; St=station

Phytoplankton Genera	Sampling Stations (HTL)											
	St-1			St-2			St-3			St-4		
	S	M	B	B	M	B	S	M	B	S	M	B
Diatoms												
Amphora sp.	1	1	0	2	3	1	3	2	1	3	3	2
Amphorprora sp.	2	2	0	2	1	2	3	3	1	2	3	1
Asterionella sp.	3	2	1	3	2	1	4	2	1	4	2	2
Bacillaria sp.	2	1	0	1	1	0	3	3	2	3	2	3
Chaetoceros sp.	1	1	0	1	0	0	1	1	0	2	1	0
Corethron sp.	1	1	1	2	1	0	2	1	1	3	2	2
Coscinodiscus sp.	31	29	26	25	21	17	34	23	21	32	27	19
Cyclotella sp.	2	1	1	3	2	1	2	2	2	3	3	2
Cylindrotheca sp.	2	1	0	3	2	2	3	3	1	3	2	1
Cymbella sp.	2	2	1	2	2	0	1	2	1	2	1	1
Diploneis sp.	2	2	1	2	1	1	2	1	0	3	3	1
Ditylum sp.	4	2	2	3	1	1	5	3	2	3	2	2
Guinardia sp.	2	1	1	3	2	1	3	2	2	3	2	1
Gyrosigma sp.	1	1	0	2	2	1	2	1	1	2	1	1
Lauderia sp.	0	0	0	1	1	1	2	1	1	3	2	0
Leptocylindrus sp.	2	1	0	2	1	1	1	1	0	2	2	1
Licmophora sp.	2	2	1	1	0	0	1	1	0	2	2	1
Lithodesmium sp.	2	2	2	2	2	1	2	3	2	2	1	1
Navicula spp.	21	19	14	9	8	6	16	15	13	21	19	18
Nitzschia spp.	11	9	8	14	11	9	9	6	5	13	11	8
Odontella sp.	2	2	1	2	2	1	3	2	2	4	3	3
Paralia sp.	3	0	0	3	2	1	3	3	1	2	3	2
Pinnularia sp.	2	2	0	2	1	1	4	2	2	2	1	1
Pleurosigma spp	5	3	3	4	3	3	3	3	3	3	3	2
Pseudo-nitzschia sp.	0	0	0	2	1	1	2	1	1	1	0	0
Rhizosolenia sp.	14	15	9	11	11	10	9	7	7	9	8	6
Synedra sp.	1	1	0	1	0	0	1	1	0	1	1	1
Streptotheca sp.	0	0	0	1	1	1	2	1	1	2	2	1
Thalassionema sp.	12	9	9	9	7	7	8	7	6	14	11	8
Thalassiosira sp.	2	0	0	2	2	1	1	0	0	1	1	1
Thalassiothrix sp.	1	1	0	1	1	0	1	0	0	1	1	0
Dinoflagellates												
Ceratium sp.	5	4	3	4	4	3	3	3	2	6	4	3
Gymnodinium sp.	1	1	0	0	0	0	2	1	0	1	0	0
Prorocentrum sp.	1	1	1	1	1	1	2	0	0	1	1	1
Protoperidinium sp.	4	3	2	4	3	1	5	4	4	4	3	1
Pyrophacus sp.	0	0	0	1	1	0	1	0	0	1	0	0
Scrippsiella sp.	0	0	0	1	0	0	0	1	0	1	1	0
Total Phytoplankton (nos. x 10²/L)	**147**	**122**	**87**	**132**	**104**	**77**	**149**	**112**	**86**	**165**	**134**	**97**

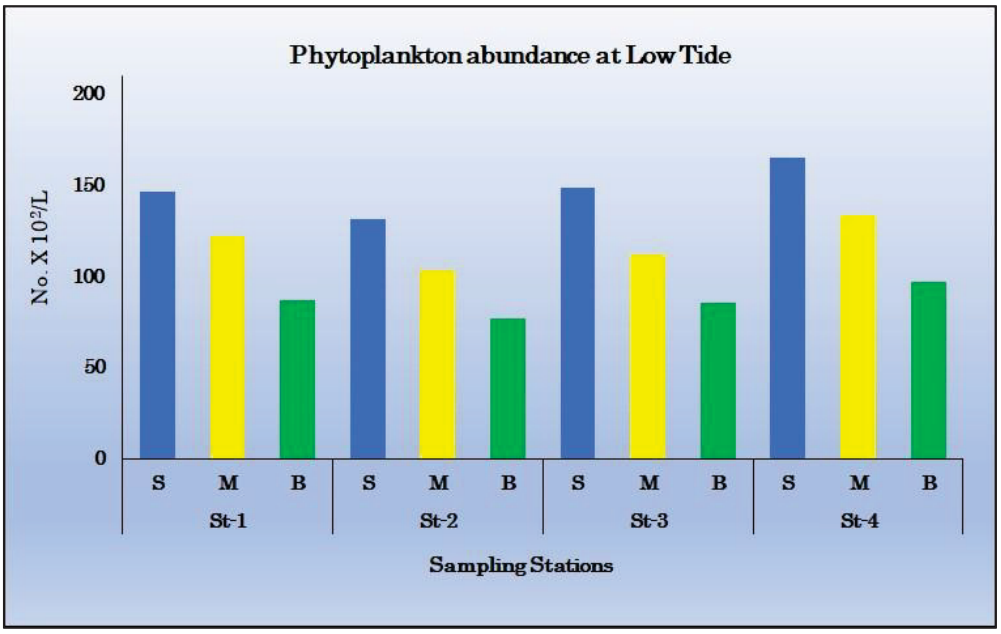


Figure 10: Low Tidal Level (LTL) phytoplankton abundance (no. x10²/ L) at different sampling stations at Petronet LNG, Dahej during June 2025

Table 11: Phytoplankton abundance (cells×10²/L) at different sampling stations during Intertidal zone of Petronet LNG, Dahej during June 2025.

Phytoplankton Genera	Sampling stations			
	IT1	IT2	IT3	IT4
Diatoms				
Amphora sp.	2	2	1	2
Amphorprora sp.	3	1	1	1
Asterionella sp.	3	2	2	3
Bacillaria sp.	2	1	1	3
Chaetoceros sp.	0	1	1	1
Corethron sp.	1	2	0	1
Coscinodiscus sp.	24	21	24	20
Cyclotella sp.	1	2	2	1
Cylindrotheca sp.	2	2	1	2
Cymbella sp.	1	0	1	1
Diploneis sp.	2	3	2	1
Ditylum sp.	3	3	2	3
Guinardia sp.	2	3	1	3
Gyrosigma sp.	3	2	3	2
Lauderia sp.	1	1	1	1
Leptocylindrus sp.	1	0	1	3
Licmophora sp.	2	3	1	2
Lithodesmium sp.	2	1	2	1
Navicula spp.	12	14	11	12
Nitzschia spp.	9	7	9	11
Odontella sp.	3	3	3	2
Paralia sp.	1	1	2	2
Pinnularia sp.	3	2	3	3
Pleurosigma spp	2	2	3	3
Pseudo-nitzschia sp.	1	1	1	0
Rhizosolenia sp.	10	11	13	9
Synedra sp.	1	0	1	1
Thalassionema sp.	19	17	19	16
Thalassiosira sp.	1	2	1	1
Thalassiothrix sp.	2	2	1	3
Dinoflagellates				
Ceratium sp.	5	4	6	4
Gymnodinium sp.	2	2	2	1
Prorocentrum sp.	1	0	1	2
Protoperidinium sp.	4	4	3	5
Scrippsiella sp.	1	2	2	2
Total Phytoplankton (nos. x 10²/L)	**132**	**124**	**128**	**128**

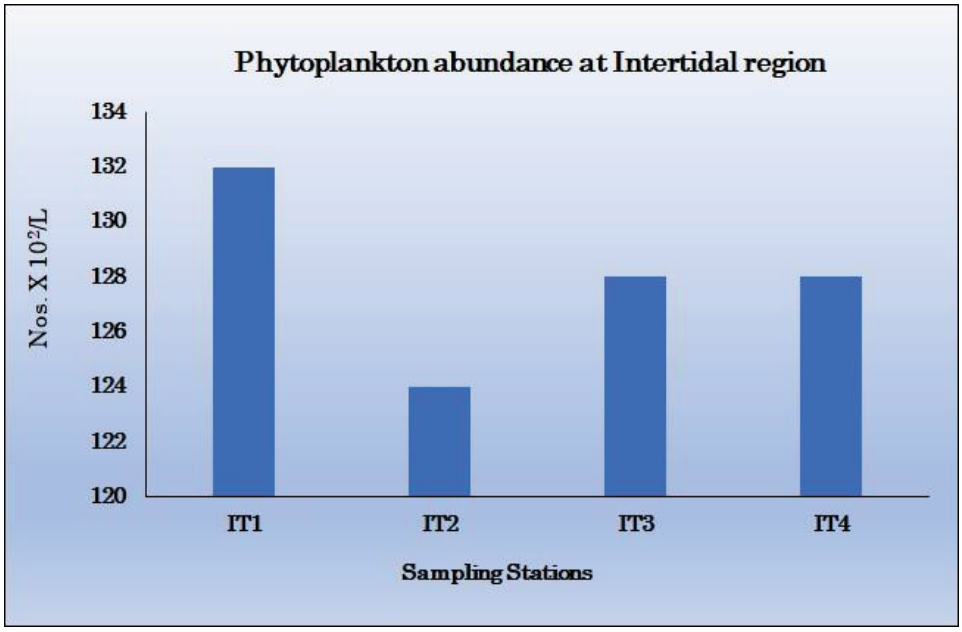
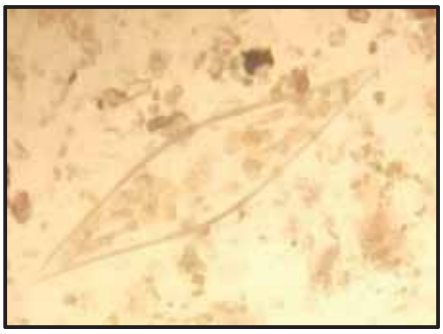
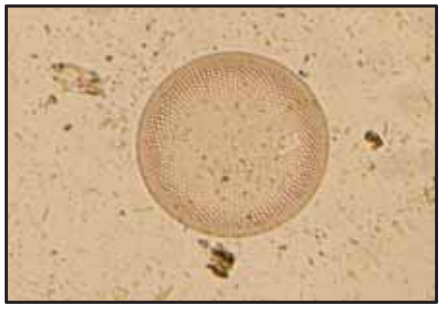


Figure 11: Inter-tidal phytoplankton abundance (no. x10²/ L) at different sampling stations at Petronet LNG, Dahej during June 2025.



Navicula sp.

Odentella sp.



Coscinodiscus sp.

Streptotheca sp.

Fig. 12- Microphotographs of phytoplankton reported in the coastal waters of Petronet LNG, Dahej during June 2025.

3.8 PHYTOPLANKTON PIGMENTS (CHLOROPHYLL *a* AND PHEOPHYTIN):

Marine phytoplankton contains essential as well as accessory pigments like that of terrestrial plants. Phytoplankton pigments capture sunlight. The resulting photosynthesis and its products, especially the oxygen and organic compounds, all rely on the light energy captured by the different phytoplankton pigments. Chlorophyll *a* is the major pigment for light harvesting, and plays a significant role in photosynthesis and photoprotection, by extending the light collection window and protecting the cell from the damage of high irradiance levels or high ultraviolet light exposure.

Algal chlorophyll forms a series of degradation products upon degradation. In addition to Chlorophyll the naturally occurring pigments in algal cells. The nature of these degradation products depends on which part of the chlorophyll molecule is affected. As chlorophyll degrades, the initial step is either the loss of the magnesium from the center of the molecule or the loss of the phyto tail. This results in the formation of the molecule, phaeophytin. Depending on the parent molecule several distinct molecules like phaeophytins, chlorophyllides, and pheophorbides can be produced. Thus, in addition to Chlorophyll *a* filtered seawater contains color degradation products of phytoplankton pigments.

3.9 CHLOROPHYLL *a* AND PHAEOPHYTIN CONCENTRATIONS

The phytoplankton biomass distribution expressed in terms of Chlorophyll *a* (Chl-*a*) and Pheophytin at selected stations in the coastal region of Petronet LNG, Dahej during June 2025. The samples for chlorophyll *a* and pheophytin is analysed for High Tide Level (HTL), Low tide level (LTL) and Inter-tidal zone (IT). For HTL and LTL samples were collected from surface, middle and bottom and for IT samples collected only form surface water. The Chl-*a* concentrations in the HTL surface water were ranged from 1.43 mg/m^3 to 1.75 mg/m^3. The Pheophytin content was ranged from 0.75 mg/m^3 to 0.85 mg/m^3. The Chl-*a* concentrations in the HTL middle water were ranged from 1.38 mg/m^3 to 1.68 mg/m^3. The Pheophytin content was ranged from 0.75 mg/m^3 to 0.82 mg/m^3. The Chl-*a* concentrations in the HTL bottom water were ranged from 1.29 mg/m^3 to 1.49 mg/m^3. The Pheophytin content was ranged from 0.72 mg/m^3 to 0.80 mg/m^3.

The Chl-*a* concentrations in the LTL surface water were ranged from 1.34 mg/m^3 to 1.60 mg/m^3. The Pheophytin content was ranged from 0.76 mg/m^3 to 0.82 mg/m^3. The Chl-*a* concentrations in the LTL middle water were ranged from 1.32 mg/m^3 to 1.57 mg/m^3. The Pheophytin content was ranged from 0.72 mg/m^3 to 0.82 mg/m^3. The Chl-*a* concentrations in the LTL bottom water were ranged from 1.29 mg/m^3 to 1.49 mg/m^3. The Pheophytin content was ranged from 0.72 mg/m^3 to 0.88 mg/m^3.

The Chl-*a* concentrations in the IT water were ranged from 1.41 mg/m^3 to 1.76 mg/m^3. The Pheophytin content was ranged from 0.81 mg/m^3 to 0.86 mg/m^3.

Table 12: Chlorophyll *a*, Pheophytin concentrations in the surface marine water of Petronet LNG, Dahej at High Tide level (HTL) and Inert-tidal zone (IT) during June 2025.

Sr. No.	Parameters	Unit	High Tide Level (HTL)							
			Surface Water							
			St.1	St.2	St.3	St.4	IT1	IT2	IT3	IT4
1.	Chlorophyll *a*	mg/m^3	1.43	1.75	1.44	1.47	1.42	1.76	1.41	1.45
2	Pheophytin	mg/m^3	0.75	0.84	0.81	0.85	0.82	0.86	0.81	0.82

Table 13: Chlorophyll *a*, Pheophytin concentrations in the middle marine water of Petronet LNG, Dahej at High Tide level (HTL) during June 2025.

Sr. No.	Parameters	Unit	High Tide Level (HTL)							
			Middle Water							
			St.1	St.2	St.3	St.4	IT1	IT2	IT3	IT4
1.	Chlorophyll *a*	mg/m^3	1.38	1.68	1.39	1.45	-	-	-	-
2	Pheophytin	mg/m^3	0.75	0.82	0.79	0.78	-	-	-	-

Table 14: Chlorophyll *a*, Pheophytin concentrations in the bottom marine water of Petronet LNG, Dahej at High Tide level (HTL) during June 2025.

Sr. No.	Parameters	Unit	High Tide Level (HTL)							
			Bottom Water							
			St.1	St.2	St.3	St.4	IT1	IT2	IT3	IT4
1.	Chlorophyll *a*	mg/m^3	1.32	1.49	1.29	1.36	-	-	-	-
2	Phaeophytin	mg/m^3	0.75	0.8	0.72	0.8	-	-	-	-

Table 15: Chlorophyll *a*, Pheophytin concentrations in the surface marine water of Petronet LNG, Dahej at Low Tide level (LTL) and Inert-tidal zone (IT) during June 2025.

Sr. No.	Parameters	Unit	Low Tide Level (LTL)			
			Surface Water			
			St.1	St.2	St.3	St.4
1.	Chlorophyll *a*	mg/m^3	1.44	1.6	1.37	1.34
2	Pheophytin	mg/m^3	0.76	0.82	0.81	0.79

Table 16: Chlorophyll *a*, Pheophytin concentrations in the middle marine water of Petronet LNG, Dahej at Low Tide level (LTL) during June 2025.

Sr. No.	Parameters	Unit	Low Tide Level (LTL)			
			Middle Water			
			St.1	St.2	St.3	St.4
1.	Chlorophyll *a*	mg/m^3	1.38	1.57	1.32	1.34
2	Pheophytin	mg/m^3	0.82	0.79	0.72	0.74

Table 17: Chlorophyll *a*, Pheophytin concentrations in the bottom marine water of Petronet LNG, Dahej at Low Tide level (LTL) during June 2025.

Sr. No.	Parameters	Unit	Low Tide Level (LTL)			
			Bottom Water			
			St.1	St.2	St.3	St.4
1.	Chlorophyll *a*	mg/m^3	1.32	1.49	1.29	1.32
2	Pheophytin	mg/m^3	0.72	0.88	0.78	0.86

3.9 SEAGRASS AND MACRO ALGAE (SEAWEEDS)

During the present study, no occurrence of seagrasses and seaweeds in the inter-tidal area was observed.

4.0 CONCLUSION

4.1 Chemical Analysis of Water Sample

4.1.1 Physical Quality

1. **pH (@ 25°C):**

   Values range from 7.94 to 8.20, indicating slightly alkaline water, which is within acceptable limits for most aquatic ecosystems.

2. **Temperature:**

   Water temperature ranges from 28.4°C to 30.0°C, showing a stable thermal profile across stations and depths.

3. **Turbidity:**

   Turbidity values range from 1 NTU to 10 NTU, indicating generally clear water conditions, with occasional increases near the surface layers.

4. **Total Suspended Solids (TSS):**

TSS values range from 162 mg/L to 238 mg/L, indicating moderate levels of suspended matter, varying slightly by station and depth.

4.1.2 Chemical Quality

1. **Biochemical Oxygen Demand (BOD):**

   Values range from 1.5 mg/L to 2.8 mg/L, suggesting low to moderate organic pollution levels.

2. **Oil & Grease:**

   Values are Below Detection Limit (BDL) at all locations, indicating no hydrocarbon contamination.

3. **Ammonical Nitrogen:**

   Consistently Below Detection Limit (BDL) at all stations, showing no significant nitrogenous pollution.

4. **Salinity:**

   Ranges from 30.3 ppt to 38.8 ppt, indicating moderate to high salinity, depending on location and depth.

5. **Dissolved Oxygen (DO):**

   Values range from 6.0 mg/L to 6.7 mg/L, indicating sufficient oxygenation to support aquatic life.

6. **Total Alkalinity (as CaCO3):**

   Ranges from 138.4 mg/L to 164.0 mg/L, reflecting good buffering capacity against pH fluctuations.

7. **Phosphate:**

   Concentrations range from 0.22 mg/L to 0.41 mg/L, indicating moderate nutrient presence, within acceptable limits.

8. **Nitrate:**

   Levels range from 0.6 mg/L to 1.0 mg/L, suggesting low nutrient loading in the water.

9. **Nickel (as Ni):**

   Values are Below Detection Limit (BDL) at all stations, confirming absence of heavy metal contamination.

10. **Calcium Carbonate:**

    Levels range from 640.2 mg/L to 950.6 mg/L, suggesting high mineral content in the water.

11. **Petroleum Hydrocarbons:**

    All samples reported Not Detected (ND), indicating no petroleum-based contamination.

4.1.3 Microbiology Quality

1. **Total Coliform:**

Counts range from Absent to 28 CFU/100 ml, indicating low to minimal faecal contamination, with occasional localized presence.

3.2 Biological parameters of water samples

- The Chl-*a* and Pheophytin concentrations were more in the surface water as compared to the bottom water. The variations observed between the surface and bottom waters could be due to several natural biological variability.
- During the sampling period (June 2025) the phytoplankton population in the coastal waters of Petronet LNG, Dahej was diverse and represented with a total of 37 phytoplankton genera (Table 9) belonging to diatoms (31 genera) and dinoflagellates (6 genera).
- In the sub-tidal area, more density and species were reported in the surface water than in middle and bottom waters. This difference could be attributed to the depth of water as surface water are more productive due to more penetration of light which decreases as increase in depth of water.
- The occurrence of copepods and their nauplii together with decapods and fish larvae/eggs in zooplankton samples highlights the fair production potential of live food resources (organisms) to support the fish and crustacean population in the study region.
- Difference in zooplankton abundance during high tide level and low tide level in the sub-tidal area was observed during the present study. Increased levels of suspended solids and the apparent increase in turbidity of water as well as high current during low tide will be considered as a possible reason for low zooplankton abundance during low tide levels.
- Compared to sub-tidal stations, in inter-tidal region zooplankton abundance was observed to be less and higher turbidity and current caused by the lower depth of water in inter-tidal areas also possible reasons for the same.
- During present study, two groups of organisms i.e. Foraminifera contributed to the 41.82% and Polychaete worms contributed to the 39.48% of total benthic organisms. Overall, the presence of Polychaete and Sipuncula worms suggests the availability of food organisms for benthic predators in the area. Due to presence of sand in the study area, foraminiferans are more abundant.
- Mangrove species *Avicennia* sp. is very sparse.
- Avifauna present in the study area is most common type.
- Overall, considering biological parameters of the study area, the study area is showed healthy environment contributing good production of phytoplankton, zooplankton and benthic organisms.

- Different Types of Sampling Photographs

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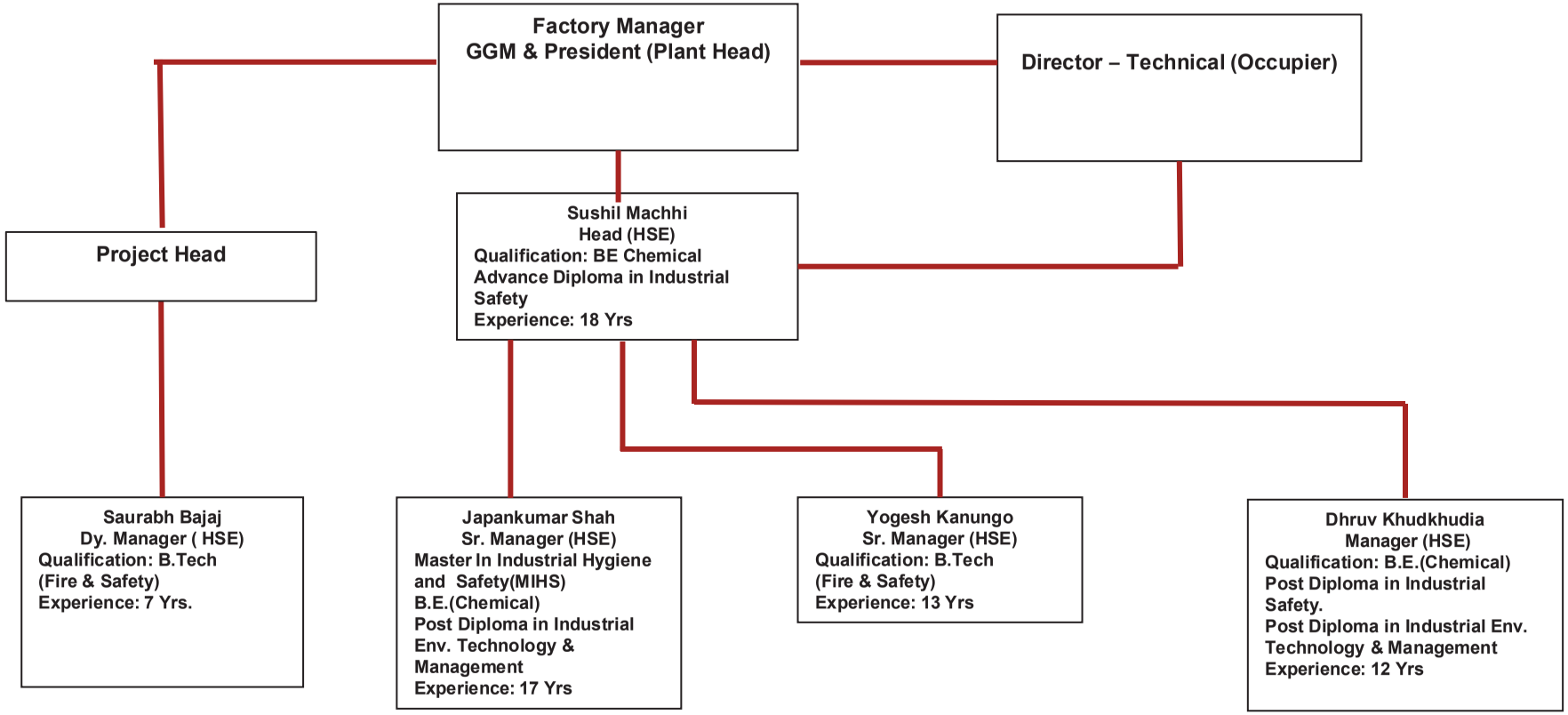
Annexure-XII
EMC Organogram – PLL, Dahej



Annexure: XIII

Bureau Veritas Certification

PETRONET LNG LTD.

PETRONET LNG LIMITED

PLOT NO. 7/A, GIDC INDUSTRIAL ESTATE, DAHEJ, TALUKA : VAGRA,
DISTRICT: BHARUCH – 392 130, GUJARAT, INDIA.

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the Management System Standards detailed below.

Standards

ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018

Scope of certification

PORT OPERATION, RECEIPT, STORAGE, RE-GASIFICATION OF LNG, DISPATCH OF RLNG & LNG.

Original cycle start date for ISO 9001 & ISO 14001: **21 January 2005**

Original cycle start date for ISO 45001: **11 March 2021**

Recertification cycle start date: **30 June 2025**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: **30 July 2028**

Certificate No. **IND.25.849/IM/U** Version: **1** Issue date: **30 June 2025**

For certificate authenticity, click here
https://certcheck.ukas.com/

ISO 9001	IN051279
ISO 14001	IN051277
ISO 45001	IN051278

UKAS MANAGEMENT SYSTEMS 0008

Signed on behalf of BVCH SAS UK Branch
Dr. JN MANIAN
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

Certification body address: 8th Floor, 100 Lower Thames Street, London, EC3R 6DL, United Kingdom.

Local office: Bureau Veritas (India) Private Limited (Certification Business)
72 Business Park, Marol Industrial Area, MIDC Cross Road "C",
Andheri (East), Mumbai – 400 093, India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call + 91 22 6274 2000.

Annexure XIV

तार "विस्फोट ", ना पुर
Telegram: '**EXPLOSIVES**', Nagpur
Website: http://peso.gov.in
Email: explosives@explosives.gov.in
दूरभाष/ Telephone : **0712-2510248**
फैक्स/ FAX : **2510577**

र्यालयीन उद्देश्य ` सभी पत्रादि "भु य विस्फोट नियंत्र " ` पदनाम से भेजे जाएं, उन` व्यक्ति त नाम से नहीं ।

All communications intended for this Office should be addressed to the 'Chief Controller of Explosives' and NOT to him by name.

भारत सर र
GOVERNMENT OF INDIA
पेट्रोलियम तथा विस्फोट सुर ा सं ठन
ROLEUM AND EXPLOSIVES SAFETY ORGANISATION
(पूर्व नाम- विस्फोट विभा ।)
(Formerly- Department of Explosives)
"ए" ब्ला , पाँचवा तल, ` न्द्रीय र्यालय परिसर,
"A" Block, 5th Floor, CGO Complex,
सेमीनरी हिल्स, ना पुर-440 006 (महा.)
Seminary Hills, Nagpur- 440006

No. PV(WC)S-784/GJ/III
Nagpur, dated 12.11.2020

To,

M/s. Petronet LNG Ltd.,
GIDC Industrial Estate, Plot No. 7/A, Dahej,
Taluk Vagra Dist. Bharuch – 392 130
GUJARAT

Sub: Approval of drawing for your proposed additional LNG storage tanks no. T-107 & T-108 of 1,70,000 m^3 water capacity – Regarding.

Dear Sirs,

Please refer to your letter No. ND/LNG/DE-III/2K20/03 dated 09.11.2020

The drawing nos. 00001 REV. 2, 00301 REV.0, 00302 REV.0 & 00303 REV. 0 showing for storage of additional LNG storage tank No. T-107 & T-108 of 1,70,000 m^3 designed at 290 mili bar(g) with associated facilities at Dahej LNG Terminal Project Dist. Bharuch meets with the requirements of EN-14620-:2006 and ***other associated facilities is approved in principle with the condition that after completion of construction and installation of facilities, please submit detailed inspection and test certificate from a reputed organization in respect above said additional storage tank, additional equipments including compressors, pumps, electrical fittings, fire fighting facilities provided, as well as control certificate from third party inspector for construction and installation of the LNG storage tank as per the design codes with additional documents as required under MSIHC Rules, 1989 such as safety audit report and information under Schedule 7 & Schedule 8 of MSIHC rules, 1989 and also comply with the conditions of earlier approval letter of even no. dated 23.01.2009, 26.12.2013 & 19.03.2014***

Please note that since the LNG will be stored below 1 atmospheric (gauge) pressure, it does not come under the purview of the Acts & Rules administered by this organization at present. However, the approval of the same is being considered under Manufacturer, Storage and Import of Hazardous Chemicals Rules, 1989. As and when the rules are amended to cover LNG storage, you will have to obtain licence for the same by submitting documents etc. which will be specified in the rules.

Yours faithfully,

Encl. a/a.

(V.K. Mishra)
Dy. Chief Controller of Explosives
for Chief Controller of Explosives

Copy forwarded to the Dy. Chief Controller of Explosives, Baroda.

for Chief Controller of Explosives

NG DRAIN DRUM	OISD-194	-	-	73.23M	COMPLIED

O. OF PARE	DESIGN PRESS, barg	DESIGN TEMP, °C	MAIN SPEC.	REMARKS
0	0.29/ (-)0.005	(-)168 /65	1,70,000 M3 (NET)	
1 REMARKS)	18.5	(-)168 /65	Flow rate: 520 m3/hr. (each) Head: 250 (hokd) mts	PUMP P-111 A/B/C SHALL BE INSTALLED IN TANK 4-T-107 AND PUMP P-112 A/B/C SHALL BE INSTALLED IN TANK 4-T-108 RESPECTIVELY. ONE ADDITIONAL WAREHOUSE SPARE PUMP SHALL BE PROVIDED. THIS WILL BE INSTALLED IN THE FOURTH SPARE PUMP WELL PROVIDED ON THE TANK OR WILL REPLACE ONE OF THE INSTALLED PUMPS.

REV.	DATE	REVISIONS	BY	CHKD	APPD	PEM/PC
0	05.11.20	ISSUED FOR PESO APPROVAL	RAJU	JKU	SKN	

इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)

PETRONET LNG LIMITED

DAHEJ LNG
REGAS FACILITIES
(DAHEJ EXPANSION PROJECT PHASE-IIIB)

BLOW UP DRAWING FOR LNG TANK 4-T-107 & 4-T-108

SCALE	JOB NO.	UNIT	DIVN.	DEPT.	DWG. NO.	REV.
1:200	B 3 2 6	0 0 0	1 7	4 4	0 0 3 0 3	0

3-1641-0500 REV.2 A0-1189 x 841

	OISD-194		=61.88M	62.27M	COMPLIED
	OISD-118	TABLE-6	30M	64.35M	COMPLIED
	OISD-194	-	-	73.23M	COMPLIED

DESIGN TEMP, °C	MAIN SPEC.	REMARKS
(-)168 /65	1,70,000 M3 (NET)	
(-)168 /65	Flow rate: 520 m3/hr. (each) Head: 250 (hold) mts	PUMP P-111 A/B/C SHALL BE INSTALLED IN TANK 4-T-107 AND PUMP P-112 A/B/C SHALL BE INSTALLED IN TANK 4-T-108 RESPECTIVELY. ONE ADDITIONAL WAREHOUSE SPARE PUMP SHALL BE PROVIDED. THIS WILL BE INSTALLED IN THE FOURTH SPARE PUMP WELL PROVIDED ON THE TANK OR WILL REPLACE ONE OF THE INSTALLED PUMPS.

REV.	DATE	REVISIONS	BY	CHKD	APPD	PEM/PC
2	04.11.20	REVISED & REISSUED FOR PESO	RAJU	JKU/DDB	SKN/JKJ	
1	28.07.20	CLIENT COMMENT INCORPORATE & ISSUED FOR PESO	RAJU	JKU/DDB	SKN/JKJ	
0	15.06.20	ISSUED FOR ENGG.	RAJU	JKU	SKN/JKJ	
A	12.12.19	ISSUED FOR COMMENTS	RAJU	JKU	SKN	

इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम) ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)

PETRONET LNG LIMITED

DAHEJ LNG
REGAS FACILITIES
(DAHEJ EXPANSION PROJECT PHASE-IIIB)

सर्म्पूण क्षेत्र योजना

OVERALL PLOT PLAN

SCALE	JOB NO.	UNIT	DIVN.	DEPT.	DWG. NO.	REV.
1:3000	B 3 2 6	0 0 0	1 7	4 4	0 0 0 0 1	2

3-1641-0500 REV.2 A0-1189 x 841

REV.	DATE	REVISIONS	BY	CHKD	APPD	PEM/PC
0	06.11.20	ISSUED FOR PESO APPROVAL	RAJU	JKU/DDE	SKN	

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REGAS FACILITIES
(DAHEJ EXPANSION PROJECT PHASE-IIIB)

KEY PLAN

SCALE	JOB NO.	UNIT	DIVN.	DEPT.	DWG. NO.	REV.
1:3000	B 3 2 6	0 0 0	1 7	4 4	0 0 3 0 1	0

3-1641-0500 REV.2 A0-1189 x 841

installed in tank 1-108 respectively.
One additional warehouse spare pump shall be provided. This will be installed in the fourth spare pump well provided on the tank or will replace one of the installed pumps.

REV.	DATE	REVISIONS	BY	CHKD	APPD	PEM/PC
0	04.11.20	ISSUED FOR PESO APPROVAL	RAJU	JKU/DDB	SKN	

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GENERAL ARRANGEMENT DRAWING & ELEVATION PLAN FOR 4-T-107 & 4-T-108

SCALE	JOB NO.	UNIT	DIVN.	DEPT.	DWG. NO.	REV.
1:3000	B 3 2 6	0 0 0	1 7	4 4	0 0 3 0 2	0