PETRONET LNG LIMITED

Petronet LNG Limited

Survey No. 347, Puthuvypu P.O.
Kochi - 682 508, India.
Tel: +91-484-2502259 Fax: +91-484-2502264
www.petronetlng.com
CIN L74899DL1998PLC093073
PAN: AAACP8148D. GST: 32AAACP8148D1ZP

PLL/KOCHI/MOEF/2020-21/05

18th November, 2020

Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forest and Climate Change,
Regional Office (SZ),
Kendriya Sadan, 4thFloor, E&F Wings, 17th Main Road,
Koramangala II Block,
Bangalore – 560034.

Sub: Compliance report to Environment Clearance accorded to the LNG Terminal at Puthuvypu, Kochi.

Ref: Environment Clearance No. J-16011/26/2001-IA-III vide your letters dated 2nd June 2003.

Sir,

The Six monthly compliance report for the above clearances are attached for the period ending 30th September 2020.

Thanking You,

With Regards

18-11-20

Yogananda Reddy
Chief General Manager & Vice President (Plant Head)

CC:

1) The Chief Environmental Engineer,
Kerala State Pollution Control Board,
Gandhinagar, Kochi – 682 020.

COMPLIANCE REPORT of CRZ Clearance no. J-16011/26/2001-IA-III vide your letters dated 02nd JUNE 2003 for the Construction of LNG Import Terminal at Puthuvypeen Island, Kochi, Kerala by M/s Petronet LNG Ltd.

Point-wise compliance to stipulated terms and conditions of the above EC & CRZ Clearance is as follows:

i. All the conditions stipulated by the Science Technology and Environment Department, Government of Kerala vide their Letter No. 4215/B1/2000/STED, dated 9th February-2001 should be effectively implemented.

- **Conditions mentioned in the Letter No. 4215/B1/2000/STED, dated 9th February-2001 did not specify any conditions for compliance.**
- **Conditions mentioned in the Letter No. 1143/A2/2005/STED dated 14th October-2005 from Kerala coastal Zone Management Authority and PLL compliance remarks are given as under:**

Sr. No.	Conditions mentioned	PLL Compliance remarks
1.	No activities will be undertaken in the Mangrove area or in the buffer zone of the mangrove. The route of the pipeline and other activities shall have minimum of 50m from the nearby mangroves and forest land if any in the CRZ area.	PLL's plot is not in the mangrove area, it is about 100 m away from the buffer zone. All activities including the laying of pipelines are confined within the PLL's plot.
2.	Expansion of existing service road in the Costal Regulation Zone-I shall not be carried out.	Expansion of the existing service road in the Costal Regulation Zone-I belongs to Panchayat and PLL will not do any expansion of the service road.
3.	No groundwater shall be tapped for the project	PLL will not tap any ground water during operation of the terminal. During construction stage, requirement of water was met by outsourcing. At present the water requirement is met by condensate water from air heater and by procuring water from vendors.
4.	The proponent shall obtain necessary No Objection Certificate (NOC) from Kerala State Pollution Control Board.	PLL has obtained required NOC from Kerala State Pollution Control Board in 1999 vide NOC **No. PCB/NOC/EK/117/98 dated 17th September-1999** which was renewed every time

		(mostly 2 years) before expiry of its validity period. We have obtained Consent to Operate with **No. PCB/HO/EKM-1/ICO-R/18/ 2018 dated 10thOctober 2018, and was valid up to on 31st March 2023,** a copy of the same has already been submitted along with compliance report dated March-2019.
5.	EIA document including risk analysis and disaster management plan should be submitted directly to MoEF for environment clearance, under intimation to this office.	Comprehensive EIA of 2.5 MMTPA Terminal and EIA with QRA and Site emergency response plan of 5 MMTPA terminal has already been submitted vide letter ND/LNG/K22/2K1 dated 16th Feb-2001 and letter dated 22nd Sept-2011 respectively.

ii. All the conditions stipulated by Kerala Pollution Control Board in their NOC No. PCB/NOC/EK/117/98 dated 17.09.99 should be effectively implemented.

- **Conditions mentioned by KSPCB in the CTE No. PCB/NOC/EK/117/98 dated 17.9.99 are and PLL compliance remarks are as under:**

Sr. No.	Conditions mentioned	PLL Compliance remarks
1	No.3: The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution.	PLL will comply with any such instructions from the Board regarding prevention and control of air, water, land and sound pollution.
2	No.4: The effluent treatment facilities proposed namely sewage treatment plant/septic tank, oil traps, hot water cooling facilities etc. shall be provided before commissioning the industry. Addition facilities required, if any to achieve the effluent standards laid down by the Board under section 17(1) (g) of Water (Prevention and Control of Pollution) Act'1974 shall also be made along with.	PLL is generating only sewage waste and is being handled through septic tank and soak pit in individual building and a STP of capacity 15KLD. Details of STP have been submitted to KSPCB. PLL will comply with effluent standard of Water Act and if additional facilities are required, then PLL will provide those facilities for treatment of effluent.

3	No.5: Air pollution control devices required shall be installed before commissioning the industry for controlling air pollution. Minimum stack/chimney height shall be as detailed below:	PLL is using Natural Gas as fuel for GTGs. GTGs are inbuilt with DLE burner (Dry low emission, Low NOx burners) and CEMS. Stacks of sufficient height was installed for GTG, EDG & Fire water pumps.
	69.0 m above ground level for flare stack	PLL had received letter from KSPCB dated 18-10-2010 regarding change in this condition, wherein the flare stack height reduced from 69.0 m to 43.2 m, a copy of this letter had already been submitted with six monthly report dated 30th September-2013.
	5.5 meter above the roof level of Generator room for the Gensets of capacity 750 KVA.	PLL has provided the stack discharge at 3.5 meter above the roof level of Generator room.
4	No.6: For bringing into use any outlet to discharge and for the discharge of sewage/trade effluent, the applicant shall obtain consent to discharge from the Board under the Water (Prevention and Control of Pollution) Act'1974 before commissioning the industry.	PLL is generating only sewage waste and is being handled through individual building's septic tank, soak pit and STP. PLL has obtained Consent to Operate with **No. PCB/HO/EKM-1/ICO-R/18/ 2018 dated 10th October 2018, and was valid up to on 31st March 2023,**a copy of the same has already been submitted along with compliance report dated March-2019.
5	No.7: The applicant shall obtain the "Consent to Operate" from the Board under the Air (Prevention and Control of Pollution) Act'1981 before commissioning the industry.	PLL has obtained Consent to Operate with **No. PCB/HO/EKM-1/ICO-R/18/ 2018 dated 10th October 2018, and was valid up to on 31st March 2023,**a copy of the same has already been submitted along with compliance report dated March-2019.
6	No.8: The sign board showing the name of the industry shall be displayed at the entrance of the site.	PLL has displayed the sign board showing name of the industry at the entrance of the site.

7	No.9: Suitable species of trees shall be planted and maintained within and along the periphery of the factory premises, forming a green belt to improve the environment.	Green Belt area has been developed along the periphery of the factory premises with trees like Gulmohar, Amaltas, Neem etc.
8	No.10: The date of commissioning of the industry shall be intimated to the Head Office and Regional office concerned of the Board at least one month in advance.	PLL had informed the date of commissioning of the industry vide letter no PLL/KOCHI/KSPCB/2013-14/C-06 dated 07th August-2013, A copy of this letter has already been submitted with six monthly report dated 30th September-2013.
9	No.11: There shall not be any fugitive emission from the plant/premises.	There is no fugitive emission from the plant/premises.
10	No.12: The location of the industry shall be as shown in the drawing attached. No change or alteration to the above shall be made.	There is no change made in the location of the industry, Location of the industry is as per the drawing.
11	No.13: The temperature difference between cooling water discharged and the receiving water body (sea water) temperature shall not be more than 50C and monitoring arrangements for the same shall be provided.	PLL is not discharging cooling water into sea or any other water body.
12	The ambient sound level measured at a distance of 1 m away from the boundary shall not exceed 65 dB (A) during day time and 55 dB (A) during night time.	Ambient sound levels measured at a distance of 1 m away from the boundary walls are well within the limits. Ambient sound level monitoring is done every month by KSPCB approved agency and the compiled report for the period of April 2020 to September 2020 is enclosed as **Annexure#1**.
13	Consent to establish shall be obtained prior to setting up of captive power plant in futures.	PLL has incorporated the details of GTG, used for captive power generation, in the subsequent application of the renewal for Consent to Establish.

iii. No change in scope of work shall be made without prior approval of this Ministry.

- **Any change in scope would be carried out only with the prior approval of the Ministry.**

iv. Project proponent shall take all safety measures and take into account the dynamics of the marine/coastal area before constructing the break waters. The recommendations made by CWP&RS (Central water & power research station) shall be duly implemented. The dredged materials shall be disposed of as per the recommendations by CWPRS.

- **The location and size of the basin has been arrived at after detailed model studies conducted by CW&PRS and further revalidated by HR Wallingford. The dredged material is being disposed of at the prescribed off-shore dumping ground identified as per CWPRS recommendations for Cochin Port Trust.**
- **The Cutter suction Dredger's dredging material is dumped on the western side of the terminal as per the Cochin Port Trust allocated area for dumping. The Trailer Suction Dredger's dredging material is being dumped at the designated dumping site of Cochin Port at outer sea, about 15.6 km from the shore.**

v. No activities will be undertaken in the mangrove area or in the buffer zone of the mangroves. The route of the pipeline and other activities shall have minimum of 50 meters distance from the nearby mangrove and forest lands, if any, in the CRZ area. Expansion of existing service road into Coastal Regulation Zone-I (I) shall not be carried out.

- **PLL plot is not in the mangrove area and is at about 100m from the buffer zone. All activities and pipelines are confined to this plot. The existing service road which belongs to Panchayat has not been expanded into the Coastal Regulation Zone-I (i) area.**

vi. The laying and commissioning of the pipelines shall be in accordance with the established procedures; practices and rules. LNG facilities shall be designed, constructed and operated as per existing international standards. The pipelines shall be provided with in-built gas leakage detection and warning system. Adequate measures for monitoring pressures in excess of those for which the pipeline is designed shall be ensured to prevent leakage of gas.

- **The terminal construction complies with all existing International codes and best practices. Sufficient safety measures and warning systems are built into the system for detection of gas leakage, overpressure and other deviations in operating parameters. Details regarding the same have already been submitted with six monthly compliance report dated 30thSeptember-2013.**
- **Standards such as OISD-194, EN: 1473, NFPA 59A and others internationals standards & guidelines were followed during the terminal construction.**

vii. Design and alignment of the pumping platform/jetty and other structures should be chosen in such a way that it causes minimum resistance to the flow of tidal waters.

- **Jetty structure was designed and constructed after due consideration of this aspect. Jetty foundation is built on piles structure to cause minimum disturbance to tidal waters.**

viii. The pipelines related to effluent discharge, sea water intake and pumping of LNG should be laid on sea floor after trenching. Trenching operations should be restricted to minimum area to minimize damage to benthic fauna.

- **PLL has already submitted to MoEF&CC the change in the regasification process of the terminal and Sea water intake is not required in Shell and Tube Vaporizers (STVs). It may be noted that PLL will not use sea water in any manner nor will discharge any effluent into the sea during operation of the terminal. Pipelines for LNG pumping from jetty to tanks are laid above ground along with trestle.**

ix. Disposal facilities should be completed prior to the commissioning of project activities. As per the thermal Plume Studies by NIO, Goa, the return water should be discharged at a location having water depth of about 3 m. Post monitoring should be carried out at definite intervals in order to ensure mid-course corrections, if any, for maintenance of environmental quality.

- **PLL has already submitted to MoEF&CC the change of the regasification process of the terminal and Sea water intake is not required in Shell and Tube Vaporizers (STVs). It may be noted that PLL will not use sea water in any manner nor will discharge any effluent into the sea during operation of the terminal. As PLL is not using sea water in any manner this condition is not applicable.**

x. Fish eggs, larvae and small fish as well as plant and animal plankton pass through the water intake screen and at times through the trash bars. Accordingly, the water intake for regasification purpose is to be provided with a velocity cap, trash bars, and low intake velocity be maintained to minimize the entry of debris and fish.

- **PLL has already submitted to MoEF&CC the change of the regasification process of the terminal and Sea water intake is not required in Shell and Tube Vaporizers (STVs). As PLL is not using sea water in any manner this condition is not applicable.**

xi. No groundwater shall be tapped for the project.

- **PLL did not tap groundwater during construction stage and will not during operation phase. Water requirement during operation of the terminal will be**

generated and met from the condensed water from air heater. At present the water requirement is met by procuring the water from vendors due to running of terminal at low output.

xii. Specific arrangement for rainwater harvesting should be made in the project design and the rainwater so harvested should be optimally utilized.

- **Rainwater collection system is in place for LNG storage tanks top and the water collected is being used in the terminal.**

xiii. The Bathymetric survey of the dredged material disposal site should be carried out regularly and it should be ensured that there is no navigational hazard due to reduction of navigational depth as a result of project activities. Location of dumping site should be informed to all concerned.

- **The dredged material disposal site is Common dumping site at outer sea, 15.6 km away from shore and managed by Cochin Port Trust. The survey is being carried out by Cochin Port Trust.**

xiv. Regular surveys shall be conducted to identify changes in the channel morphology so that navigational hazards are minimal.

- **The channel is belongs to Cochin Port and its Morphology survey has been done by Cochin Port Trust.**

xv. Mangrove afforestation will be promoted in consultation with the expert agencies and the local NGOs in the area. A detailed plan shall be worked out in this regard and submitted to this Ministry within 3 months.

- **A Detailed plan for Mangrove afforestation has already been submitted with six monthly compliance report dated 30th September-2013.**
- **In FY 2014-2015, Petronet LNG Ltd, Kochi has arrived at an agreement with Kerala State Social Forestry for a mangrove afforestation project in Ernakulum district. The total cost of the project is estimated as 71.05 lakhs. Till date, Petronet LNG Limited have already transfer fund of Rs.60.00 lakh for the Mangrove Afforestation Project which is entitled as "Project for Mangrove afforestation in Ernakulam district". All details with regard to this project had already been submitted with six monthly compliance report dated 30th March-2015. Latest progress report was submitted along with the compliance report dated March – 2020.**

xvi. Marine environment shall be periodically monitored to assess changes, if any, in the ecology and suitable remedial measures, if any required, shall be taken.

- **PLL is conducting marine water sampling and analysis by a KSPCB approved third party agency and the report suggest no adverse changes in the marine environment.**
- **Latest copy of the marine water sampling report dated June - 2020 is enclosed here as Annexure#2.**

xvii. The budget allocated for environment safeguard measures shall not be diverted for any other purpose.

- **Budget allocated for environment safeguard is not diverted for any other purposes.**

xviii. The comprehensive Environmental Impact Assessment report shall be completed early and the final report submitted to this Ministry within one year from the date of this clearance letter. Based on the comprehensive EIA report, additional environmental safeguards, as required, shall be implemented by the proponents.

- **Comprehensive EIA of 2.5 MMTPA Terminal and EIA with QRA and Site emergency response plan of 5 MMTPA terminal has already been submitted with vide letter ND/LNG/K22/2K1 dated 16th February-2001 and letter dated 22nd September-2011 respectively.**

xix. Based on the risk analysis, Disaster Management Plan should be prepared and submitted to this Ministry within 6 months. Necessary safety norms for the movement of LNG ships are to be laid down by Cochin Port Trust Authorities within their jurisdiction and communicated to the project proponent for strict compliance with a view to prevent collision, grounding or ramming or any other major accidents.

- **EIA with QRA and site emergency response plan (for 5 MMTPA terminal) submitted to MoEF vide letter dated 22nd September-2011 for EAC recommendations.**
- **Emergency Response and Disaster Management Plan of Petronet LNG Ltd, Kochi terminal was submitted with six monthly compliance report dated 05th April-2013.**

5. GENERAL CONDITIONS:

i.	Construction of the proposed structure should be undertaken meticulously conforming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification, 1991and its amendments. All the construction designs/drawings relating to the proposed construction activities must have approvals of the concerned	The construction drawings have been approved by the concerned State Government Department/Agencies like Department of Factories and Boilers, Fire and rescue Services etc. Copy of the approvals of Factories and Boiler, Fire rescue services has already been submitted with six monthly compliance report dated 05th April-2013.

	State Government Departments/Agencies.	
ii.	The proponent shall ensure that as a result of the proposed constructions, ingress of the saline water into the groundwater does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.	▪ PLL is continuously ensuring that there is no ingress of saline water into the ground water by periodic analysis of ground water, and for the same we have installed a Piezometer at green belt area inside the terminal. ▪ Sampling of the water drawn from Piezometer is being carried out by approved third party. The latest Ground water analysis report for the month of June 2020 is enclosed as **Annexure#3.**
iii.	Handling, manufacturing, storage and transportation of all hazardous chemicals should be carried out in accordance with MSIHC Rules, 1989 and subsequent amendments, All approvals from State and Central nodal agencies including OISD, Chief Controller of Explosives, Chief Inspectorate of Factories must be obtained. A comprehensive contingency plan in collaboration with the concerned authorities must be formulated before commissioning of the project to meet any eventuality in case of an accident	▪ We have applied for NOTIFICATION OF SITES to Factories & Boilers department vide letter no. PLL/KOCHI/F&B/2012-13/C-04 dated 28th November 2012 as per requirement of MSIHC rules 1989. The same has already been submitted with six monthly compliance report dated 05th April-2013. ▪ We have received final clearance from Chief Controller of Explosive for commissioning of Jetty, LNG unloading line, LNG tanks, and Regasification facilities with letters dated 04th February-2013. We have already submitted the same with six monthly compliance reports, dated 05th April-2013. ▪ Permit to construct and plan approvals were obtained from Director of Factories and Boilers. We have already submitted the details regarding the same with six monthly compliance report, dated 05th April-2013. ▪ We have received the renewed factory license dated 16th November 2019, valid till 31st December-2020; a copy of the same has been submitted along with the compliance report for the period up to March 2020. ▪ We have prepared Emergency response and Disaster Management Plan and it was submitted to District collector office vide letter no. PLL/KOCHI/ERDMP/DC/2014-15/C-01 dated 5th April-2014. ▪ A comprehensive contingency plan was prepared in collaboration with the concerned authorities before

		commissioning of the project to meet any eventuality in case of an accident ▪ All approvals as necessary were obtained before the commissioning of the project. Terminal was commissioned on 20th August-2013 and all activities related to commissioning were completed by 10th September 2013.
iv.	Minor oil spills are likely to be caused due to ship movement in the port. Engine room waste, oil ballast and tank wash water have to be discharged to the shore reception for treatment by port authorities or by certified contractors. In case of major oil spills due to accidents. Petronet LNG Limited should interact with Kochi Port to ensure full preparedness to undertake all combat operations.	Oil spill Contingency plan is formulated to take care of such eventualities. We have already submitted details regarding the same with six monthly compliance report dated 05th April-2013. PLL is having one FIFI 1 tug with required boom barrier and other oil spill control related equipment. PLL jetty falls under the Cochin Port Trust (CPT), and the Oil Spill Contingency Management Plan is prepared by CPT. PLL has provided the information required from the terminal to be incorporated in the Oil Spill Contingency Management Plan. Coast guard is also part of the Oil spill contingency plan.
v	Control room/tower should be equipped with modern communication and control device to act instantaneously if spill/leakage occurs. At the jetty, loading arm should be equipped with latest Emergency Release Systems (ERS) and monitoring device for LNG services. Articulated cargo transfer arm should be used at the unloading jetty. It shall be ensured that LPG and LNG tankers are scheduled properly to avoid bunching and also that LPG will not be unloaded from the ship when the LNG tanker is at berth.	▪ Control room is equipped with modern communication and control facilities including emergency shut-down systems in the event of spill occurring. ▪ Loading arms are equipped with latest Emergency Release System (ERS). ▪ We do not handle LPG at our jetty so the condition stand complied.
vi.	Dry chemical firefighting extinguishers should be provided at all levels of the jetty to permit personnel to fight small fires. Water spray for dispersing un-ignited vapour clouds should be kept as standby. Full- fledged firefighting facilities should be provided at jetty.	• Full-fledged firefighting facilities are provided in the jetty to handle any emergencies in the event of a fire. • DCP extinguishers are provided at every level of jetty. Water curtain system is also provided at required locations. Brief note on Fire protection facilities have already been submitted with six monthly compliance report dated 30th September-2013.

vii.	A well-equipped laboratory with suitable instruments to monitor the quality of air and water shall be set up as to ensure that the quality of ambient air and water conforms to the prescribed standards. The laboratory will also be equipped with qualified manpower including a marine biologist so that the marine water quality is regularly monitored in order to ensure that the marine life is not adversely affected as a result of implementation of the said project. The quality of ambient air and water shall be monitored periodically in all the seasons and the results should be properly maintained for inspection of the concerned pollution control agencies. The periodic monitoring reports at least once in 6 months must be sent to this Ministry (Regional Office at Bangalore) and State Pollution Control Board.	▪ A well-equipped laboratory with suitable Equipment's for monitoring the quality of air and water is in place, with Qualified and competent personals. However, PLL is carrying out periodic monitoring of environmental parameters by KSPCB approved agency. ▪ Ambient air monitoring is carried out once in a month at four different locations and analysis report for the month of April 2020 to September- 2020 is enclosed as **Annexure # 4.** ▪ PLL is conducting marine water quality analysis, once in six month. The latest test report, dated June -2020 is enclosed as **Annexure#2.**
viii.	Adequate provisions for infrastructure facilities such as water supply, fuel for cooking, sanitation, etc must be provided for the laborers during the construction period in order to avoid damage to the environment, Colonies for the laborers should not be located in the Coastal Regulation Zone area. It should also be fuel wood purpose	▪ During the construction phase, PLL has provided adequate infrastructure facilities such as water supply, fuel for cooking, sanitation, etc. to the labourers. ▪ Labour colonies were not located in Costal Regulation Zone area.
ix.	To prevent discharge of sewage and other liquid wastes into the water bodies, adequate system for collection and treatment of the wastes must be provided. No sewage and other liquid wastes without treatment should be allowed to enter into the water bodies.	Individual Septic tanks with soak pits have provided for collection of sewage. The collected sewages are regularly disposed through authorized agency of Cochin corporation. A STP of capacity 15 KLD is also installed for the treatment of sewages generated from administrative building and canteen. Treated slurry & water from STP are being used for gardening purpose. No sewage or waste from PLL will be allowed to enter water bodies
x.	Appropriate facility should be created for the collection of solid and liquid wastes generated by the barges/vessels and their safe treatment and disposal should be	Vessels and tugs will dispose their garbage as per the guidelines of Annex V of Marpol (IMO). We have already submitted the related details with six monthly compliance report dated 05th April-2013.

	ensured to avoid possible contamination of the water bodies	
xi.	Necessary navigational aids such as channel markers should be provided to prevent accidents. internationally recognized safety standards shall be applied in case of barge/vessel movements	PLL has provided 4 Nos. of Buoys as instructed by cochin post trust. In future, if required, more navigation aids will be provided as per instruction/guidance of Cochin Port Trust. All required safety standards will be applied to vessel movements as per directions of Cochin Port Trust.
xii.	The project authorities should take appropriate community development and welfare measures for villagers in the vicinity of the project site, including drinking water facilities. A separate fund should be allocated for this purpose.	PLL had carried out various activities for the community development and welfare. Several CSR projects have been implemented and planned by PLL through its subsidiary company, Petronet LNG Foundation Limited and a separate fund has been earmarked for this. A brief description of our CSR activities with photographs are enclosed as **Annexure # 5.**
xiii.	The quarrying material required for the construction purpose shall be obtained only from the approved quarries/borrow areas. Adequate safeguard measures shall be taken to ensure that the overburden and rocks at the quarry site do not find their way into water bodies.	Quarrying material was sourced from Government approved quarries. We have already submitted the details regarding the same with six monthly compliance report on dated 05th April-2013.
xiv.	The dredging operations to be undertaken with the prior approval of this Ministry, shall be executed with appropriate safeguard measures to prevent turbidity conditions in consultation with the expert agencies such CWPRS/NIO.	PLL has obtained Environmental clearance from the MOEF vide their order No. J-16011/26/2001-IA-IIIdated 16th November-2010 for undertaking dredging operations of the basin. Dredging operations is completed and PLL has handed over the basin to M/s Cochin Port Trust for its maintenance.
xv.	For employing unskilled, semi-skilled and skilled workers for the project, preference shall be given to local people.	During the project, PLL had given preference to locals while employing unskilled, semi-skilled and skilled worker wherever possible based on their qualification and merits.
Xvi.	The recommendations made in the Environment Management Plan and Disaster Management Plan, as contained in the Environmental Impact Assessment and Risk Analysis Reports of the project shall be effectively implemented.	All recommendations made in Environment Management Plan and Disaster Management Plan, as contained in Environment Impact Assessment and Risk Analysis Report of the project are effectively implemented.
Xvii.	A separate Environment Management Cell with suitably qualified staff to carry out various environment issues should	PLL has set up an Environment Management Cell under chief General Manager & Vice President (Plant Head).

	be set up under the charge of a Senior Executive who will report directly to the Chief Executive of the Company.	Other members of the team includes Head of; Operation department, C&P (Contracts & Procurement) department, Technical department, HSE department, Civil Department, Lab operation & a representative from HR department for effective implementing the stipulated environment safeguards. The SOP for the Environment Management Cell was revised on 01.06.2020 and the copy of the same has been enclosed here as **Annexure #6.**
Xviii.	The project affected people, if any should be properly compensated and rehabilitated.	No people affected directly as the project was on uninhabited land. Some Land was acquired by Cochin Port Trust for constructing new access road for the project and those affected were provided with infrastructure like road, drain, electricity and water as per guideline by authorities.
xix.	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry.	Budget allocated for environment safeguard will not be diverted for other purposes.
xx.	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Boards by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	PLL will extend full support to the officers of this ministry's Regional Office, Bengaluru and the officers of the Central and State Pollution Control Board during the inspection for monitoring purpose by furnishing full details and action plans including the action taken reports in respect of mitigate measures and other environmental protection activities.
xxi.	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection. The project proponents should be responsible for implementing the suggested safeguard measures.	PLL has not carried out any deviation or alteration in the project. PLL will comply with this requirement and will take permit from the Ministry prior to any deviation, alteration and modification in the project.

xxii.	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	PLL is aware of the Ministry's right to revoke clearance for not complying with the conditions stipulated in the clearance.
xxiii.	This Ministry or any other competent authority may stipulate any additional conditions subsequently, if deemed necessary for environmental protection, which shall be complied with.	PLL will comply with any additional conditions stipulated by the ministry or any other competent authority.
xxiv.	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Committee and may also be seen at Website of the Ministry of Environment & Forests at http://www.envfornic.in. The advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bangalore.	PLL had advertised regarding environmental clearance accorded by the Ministry of Environment & Forest in two local newspapers widely circulated in the region around the project. Copy of the advertisement given in the two local newspapers has already been submitted along with the six monthly compliance report dated 30th September-2013.
xxv.	The Project proponents should 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.	Site appraisal clearance obtained on 28th Feb 2011. No separate land developmental work was required, as this involved only augmentation of equipment in the same land.

Thanking You,

With Regards

18-11-20

Yogananda Reddy
Chief General Manager & Vice President (Plant Head)

Annexure -1

Ambient Noise Monitoring Report, April 2020 - September 2020

Sr. No.	Avarage, Month	Apr-20		May-20		Jun-20		Jul-20		Aug-20		Sep-20	
	Location	Day	Night	Day [dB(A)]	Night[dB(A)]	Day [dB(A)]	Night[dB(A)]	Day [dB(A)]	Night[dB(A)]	Day [dB(A)]	Night[dB(A)]	Day [dB(A)]	Night[dB(A)]
	Limit, dB (A)	65.00	55.00	65.00	55.00	65.00	55.00	65.00	55.00	65.00	55.00	65.00	55.00
1	East side Gate Outside boundary wall	Not done due to		52.30	41.00	51.90	40.00	51.70	40.70	51.80	41.40	52.20	41.80
		COVID -19 Lock down											
2	North side Gate Outside boundary wall			50.20	40.00	50.60	38.70	50.90	39.20	50.60	40.40	51.10	40.70
3	West side Gate Outside boundary wall			51.90	39.70	51.70	38.80	51.80	40.20	51.30	40.90	51.50	41.20
4	South side Gate Outside boundary wall			48.40	39.90	48.70	38.20	49.10	39.60	49.80	40.30	50.00	40.80
	Avg (Year)			50.70	40.15	50.73	38.93	50.88	39.93	50.88	40.75	51.20	41.13

Dy. Manager HSE

Sr. Manager- HSE

Annexure -2

Standard^{S} Environmental Monitoring

TEST REPORT

NABL(TC-5402)

Test Report No: TC540220000000883P	Date: 06.07.2020	Page 1 of 1

CUSTOMER DETAILS	
Customer Name & Address	M/s Petronet LNG Limited Survey No.347, Puthuvypu P.O Kochi , Ernakulam District
Customer Reference	Test Request Form Dated 30.06.2020

SAMPLE DETAILS			
Sample Code	WT20060066	Sample Received On	30.06.2020
Sample Name	Water	Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06
Sample Description	Marine Water	Sampling Location	Port Jetty
Identification By Customer	Port Jetty	Sampling Condition	Good
Sampled On	30.06.2020	Test Started On	01.07.2020
Sampled By	Laboratory	Test Completed on	06.07.2020

SL NO	TEST PARAMETER	TEST METHOD	UNIT	RESULT
01	Temperature	IS 3025 Part 9:1984 RA 2006	^{0}C	29.0
02	Colour	IS 3025 Part 4:1983 RA 2017	Hazen	5.00
03	pH	IS 3025 Part 11:1983 RA 2017	---	7.51
04	Electrical Conductivity	IS 3025 Part 14:1984 RA 2019	µS/cm	34410
05	Total Dissolved Solids	IS 3025 Part 16:1984 RA 2017	mg/L	22360
06	Turbidity	IS 3025 Part 10:1984 RA 2017	NTU	50.9
07	Chloride (as Cl)	IS 3025 Part 32:1988 RA 2019	mg/L	10646
08	Salinity	SEAAL/SOP/06	ppt	19.2
09	Sulphate (as SO_4)	IS 3025 Part 24:1986 RA 2019	mg/L	776
10	Iron (as Fe)	IS 3025 Part 53:2003 RA 2019	mg/L	24.5
11	Mercury (as Hg)	APHA (23rdEdition) 3112-B: 2017	mg/L	< 0.002
12	Lead (as Pb)	APHA (23rd Edition) 3111-B: 2017	mg/L	< 0.20
13	Copper (as Cu)	IS 3025 Part 42:1992 RA 2019	mg/L	< 0.05
14	Zinc (as Zn)	APHA 3111B 23rd Edn, 2017	mg/L	< 0.025
15	Nickel (as Ni)	IS 3025 Part 54: 2003 RA 2019	mg/L	< 0.10
16	Cadmium (as Cd)	IS 3025 Part 41: 1992 RA 2019	mg/L	< 0.03
17	Cyanide (as CN)	IS 3025 Part 27:1986 RA 2019	mg/L	< 0.01
18	Fluoride(as F)	APHA 23rdEdition 4500-F- B D: 2017	mg/L	1.59
19	Arsenic (as As)	IS 3025 Part 37: 1988 RA 2019	mg/L	< 0.002
20	Hexavalent Chromium (as Cr^{3+})	IS 3025 Part 52:2003 RA 2019	mg/L	< 0.20
21	Pesticide	USEPA 508 : 1995	---	Absent
22*	Insecticide	USEPA 508 : 1995	---	Absent
23	Oil & Grease	IS 3025 Part 39:1991 RA 2019	mg/L	20.0
24	Dissolved Oxygen	IS 3025 Part 38:1989 RA 2019	mg/L	6.19
25	Biochemical Oxygen Demand (3 days at 27 ^{0}C)	IS 3025 Part 44:1993 RA 2019	mg/L	< 2.00
26	Chemical Oxygen Demand	IS 3025 Part 58:2006 RA 2017	mg/L	1182
27	Total Suspended Solids	IS 3025 Part 17:1984 RA 2017	mg/L	644
28	Total Bacterial Count	IS 1622:1981 RA 2014	cfu/mL	116
29	Faecal Coliform	IS 1622:1981 RA 2014	MPN/100ml	< 2
30	E coli	IS 1622:1981 RA 2014	MPN/100ml	< 2

*Not Under NABL scope

End of Report

For and on behalf of
Standard^{s} Environmental & Analytical Laboratories

Preethu Haresh
Microbiologist
Authorized Signatory

Laiju P. N.
Laboratory Head
Authorized Signatory

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Standard^{S} Environmental & Analytical Laboratories
Accreditation and Approval: NABL as per ISO 17025: 2017 & "A" Grade Laboratory of KSPCB
K.J. Tower, Pathalam, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43
Web: www.sealabs.in, E-mail: seaalab@gmail.com

Annexure -3

Standard[S] Environmental Monitoring

NABL(TC-5402)

TEST REPORT

Test Report No: TC540220000000884P	Date: 06.07.2020	Page 1 of 1

CUSTOMER DETAILS			
Customer Name & Address	M/s Petronet LNG Limited Survey No.347, Puthuvypu P.O Kochi , Ernakulam District		
Customer Reference	Test Request Form Dated 30.06.2020		
SAMPLE DETAILS			
Sample Code	WT20060067	Sample Received On	30.06.2020
Sample Name	Water	Sampling Procedure	SEAAL/ENL/GEN/SOP/01& SEAAL/MBL/SOP/06
Sample Description	Ground Water	Sampling Location	Piezometer Well
Identification By Customer	---	Sampling Condition	Good
Sampled On	30.06.2020	Test Started On	01.07.2020
Sampled By	Laboratory	Test Completed on	06.07.2020

SL NO	TEST PARAMETER	TEST METHOD	UNIT	RESULT
01	pH	IS 3025 Part 11:1983 RA 2017	---	6.90
02	Total Dissolved Solids	IS 3025 Part 16:1984 RA 2017	mg/L	305
03	Turbidity	IS 3025 Part 10: 1984 RA 2017	NTU	4.80
04	Chloride (as Cl)	IS 3025 Part 32:1988 RA 2014	mg/L	12.2
05	Iron (as Fe)	IS 3025 Part 53:2003 RA 2014	mg/L	0.39
06	Fluoride(as F)	APHA 23rdEdition 4500-F- B D: 2017	mg/L	0.15
07	Sulphate (as SO_4)	IS 3025 Part 24:1986 RA 2014	mg/L	7.35
08	Electrical Conductivity	IS 3025 Part 14:1984 RA 2013	µS/cm	469
09	Mercury (as Hg)	APHA (23rdEdition)3112-B: 2017	mg/L	<0.002
10	Lead (as Pb)	APHA (23rd Edition)3111-B: 2017	mg/L	<0.20
11	Copper (as Cu)	IS 3025 Part 42:1992 RA 2014	mg/L	<0.05
12	Total Chromium (as Cr)	IS 3025(Part 52):2003	mg/L	<0.40
13	Zinc (as Zn)	APHA 3111B 23rd Edn, 2017	mg/L	<0.025
14	Temperature	IS 3025 Part 9:1984 RA 2006	^{0}C	29.0
15	Salinity	SEAAL/SOP/06	ppm	0.02
16	Oil & Grease	IS 3025 Part 39:1991 RA 2014	mg/L	2.30
17	Dissolved Oxygen	IS 3025 Part 38:1989 RA 2014	mg/L	4.27
18	Biochemical Oxygen Demand (3 days at 27 ^{o}C)	IS 3025 Part 44:1993 RA 2014	mg/L	2.03
19	Chemical Oxygen Demand	IS 3025 Part 58:2006 RA 2012	mg/L	10.0
20	Cyanide (as CN)	IS 3025 (Part-27):1986 (Reaff.2003)	mg/L	<0.01
21	Cadmium (as Cd)	APHA (23rd Edition) 3111-B: 2017	mg/L	<0.03
22	Pesticide	SEAAL/INS/RWM/SOP/01	---	Absent
23*	Insecticide	USEPA 508 : 1995	---	Absent

*Not Under NABL scope

Note: Values given for test parameters Mercury, Lead, Copper, Chromium, Zinc, Cyanide and Cadmium are our MDL values (Minimum Detectable Values) as per NABL scope.

End of Report

For and on behalf of
Standards Environmental & Analytical Laboratories

Laiju P. N.
Laboratory Head

Authorized Signatory

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Annexure -4

Ambient Air Monitoring Report, (April 2020 to September 2020)									
LOCATION NO.	Location of Ambient Air Sampling	Month	PM (<10 microns) in Micrograms/m3; Limit 100 Micrograms/m3	PM (<2.5 microns) in Micrograms/m^3; Limit 60 Micrograms/m^3	SOx as SO_2 in Micrograms/m^3; Limit 80 Micrograms/m^3	NOx, Oxides of Nitrogen in Micrograms/m3 ; Limit 80 Micrograms/m3	Carbon Monoxide (CO); mg/m^3 4.0 mg/m^3	OZONE Micrograms/m^3 ; Limit 180 Micrograms/m^3	Hydrocarbons (HC); Micrograms/m3 ;
1	(Watch Tower-2) near MGH building	Apr-20	Environment monitoring not carried out due to COVID -19 Lockdown						
		May-20	51.4	20.2	0	0	0	0	0
		Jun-20	48.5	19.6	0	0	0	0	0
		Jul-20	41.9	15.9	0	0	0	0	0
		Aug-20	47.5	18.4	0	0	0	0	0
		Sep-20	52.3	19.6	0	0	0	0	0
		Avarage	48.32	18.74	0.00	0.00	0.00	0.00	0.00
2	Near Fire Station Building	Apr-20	Environment monitoring not carried out due to COVID -19 Lockdown						
		May-20	69.8	22.4	0	5.16	0	0	0
		Jun-20	61.7	20.6	0	6.28	0	0	0
		Jul-20	47.8	16.6	0	4.8	0	0	0
		Aug-20	53.9	18.6	0	4.1	0	0	0
		Sep-20	58.6	20.1	0	3.86	0	0	0
		Avarage	58.36	19.66	0.00	4.84	0.00	0.00	0.00
3	Fire water Reservoir+ Watch Tower-5	Apr-20	Environment monitoring not carried out due to COVID -19 Lockdown						
		May-20	50.9	21.6	0	5.46	0	0	0
		Jun-20	47.1	18.4	0	5.71	0	0	0
		Jul-20	44.9	15.1	0	3.5	0	0	0
		Aug-20	50.3	19.1	0	3.82	0	0	0
		Sep-20	56.8	22.4	0	4.19	0	0	0
		Avarage	50.00	19.32	0.00	4.54	0.00	0.00	0.00
4	Watch Tower-3 near Tank T-101	Apr-20	Environment monitoring not carried out due to COVID -19 Lockdown						
		May-20	52.9	21.5	0	0	0	0	0
		Jun-20	47.6	18.9	0	0	0	0	0
		Jul-20	50.1	18.2	0	0	0	0	0
		Aug-20	56.5	21.4	0	0	0	0	0
		Sep-20	62.8	23.9	0	0	0	0	0
		Average	53.98	20.78	0.00	0.00	0.00	0.00	0.00

Dy. Manager HSE

Sr. Manager HSE

CSR UPDATE
KOCHI

Major Highlights
April 2020- September2020

HEALTHCARE & DISASTER MANANGEMENT







5000 nos. of food and sanitization kits distributed for fishermen families across 6 panchayats in Vypin through the Kerala State Coastal Area Development Corporation (KSCADC).







Distributed Personal Protective Equipment's (PPE's) for Healthcare workers in Kalammasery Medical College (COVID hospital) worth Rs. 18.50 lakhs through Indian Medical Association (IMA)

HEALTHCARE & DISASTER MANANGEMENT





തിരുവനന്തപുരം, കോഴിക്കോട്, കണ്ണൂർ വിമാനത്താവളങ്ങളിലെ
കസ്റ്റംസ് ഉദ്യോഗസ്ഥർക്കു പെട്രോനെറ്റ് എൽഎൻജി നൽകുന്ന
പിപിഇ കിറ്റുകൾ പെട്രോനെറ്റ് വൈസ് പ്രസിഡന്റ് (പ്ലാന്റ് ഹെഡ്)
യോഗാനന്ദ റെഡ്ഡിയിൽ നിന്ന് കസ്റ്റംസ് പ്രിവന്റീവ് കമ്മീ.
കമ്മിഷണർ പി.ജി. ലാലു ഏറ്റുവാങ്ങുന്നു.

Distributed 1080 nos. of Personal Protective Equipment (PPE) kits to the Customs officers deployed at three airports (Kannur, Kozhikode, Calicut) in Kerala.







Distributed 500 nos. of Personal Protective Equipment (PPE) kits, Face shields, N95 masks to the Health care workers in Medical College Hospital, Kottyam

EDUCATION









Distribution of ladies bicycles to 2000 girls students of fisher folk community in the 9 coastal districts of Kerala





Construction of School library for Arumughavilasam LP school, Kannur





Skill training classes for Person with Disabilities (PWD's) in association with NHFDC.

PROMOTION OF ARTS









Promotion of the art form of Kathakali through Thripunithura Kathakali Kendram.

ENVIRIONMENT







Planting trees at the periphery of Vypin Block panchayat under the Haritha Vypin Project along with Vypin Block panchayat





PETRONET LNG FOUNDATION





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Annexure -6

ENVIRONMENT MANAGEMENT CELL

Prepared By / Reviewed by	Approved by	MR
DM (HSE) / SM (HSE) 03/06/20	Terminal Head	SM (TS)

REVISION HISTORY

Date of Issue	Revision / Amendment	Details	Page No
10-02-2014	Rev-00		
26-08-2016	Rev-01	Inclusion of Sr.Mgr (Operations) and Change of Head (HSE) and Head (Projects)	02
20-03-2017	Rev-02	Inclusion of Mgr.(Materials) & Mgr.(Technical)	04
03.06.2017	Rev-03	Inclusion of GM (O&M) and Ms. Selsa Rajesh name is replaced with Mr.Biju from Lab	04
01.05.2018	Rev-04	1. VP (O & M) is replaced with Sr VP (plant head) and Inclusion of Sr Officer (HR) 2. Environment management cell structure also reorganized.	04
01.06.2020	Rev-05	EMC committee members and Head (EMC) names & designations are updated	07

CONTENTS

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2. SCOPE..... 04

3. Environment Management Cell..... 04

A. Members of Environment management cell..... 04

B. Structure of Environment Management cell 05

C. Roles and responsibility of Environment Management cell 06

D. Functioning of Environment Management cell..... 07

E. List of team members & designation 07

1. PURPOSE:

Purpose of this document is to establish an Environment Management system to monitor all plant activities, in order to ensure that they are carried out in an environmental friendly and sustainable manner.

2. SCOPE:

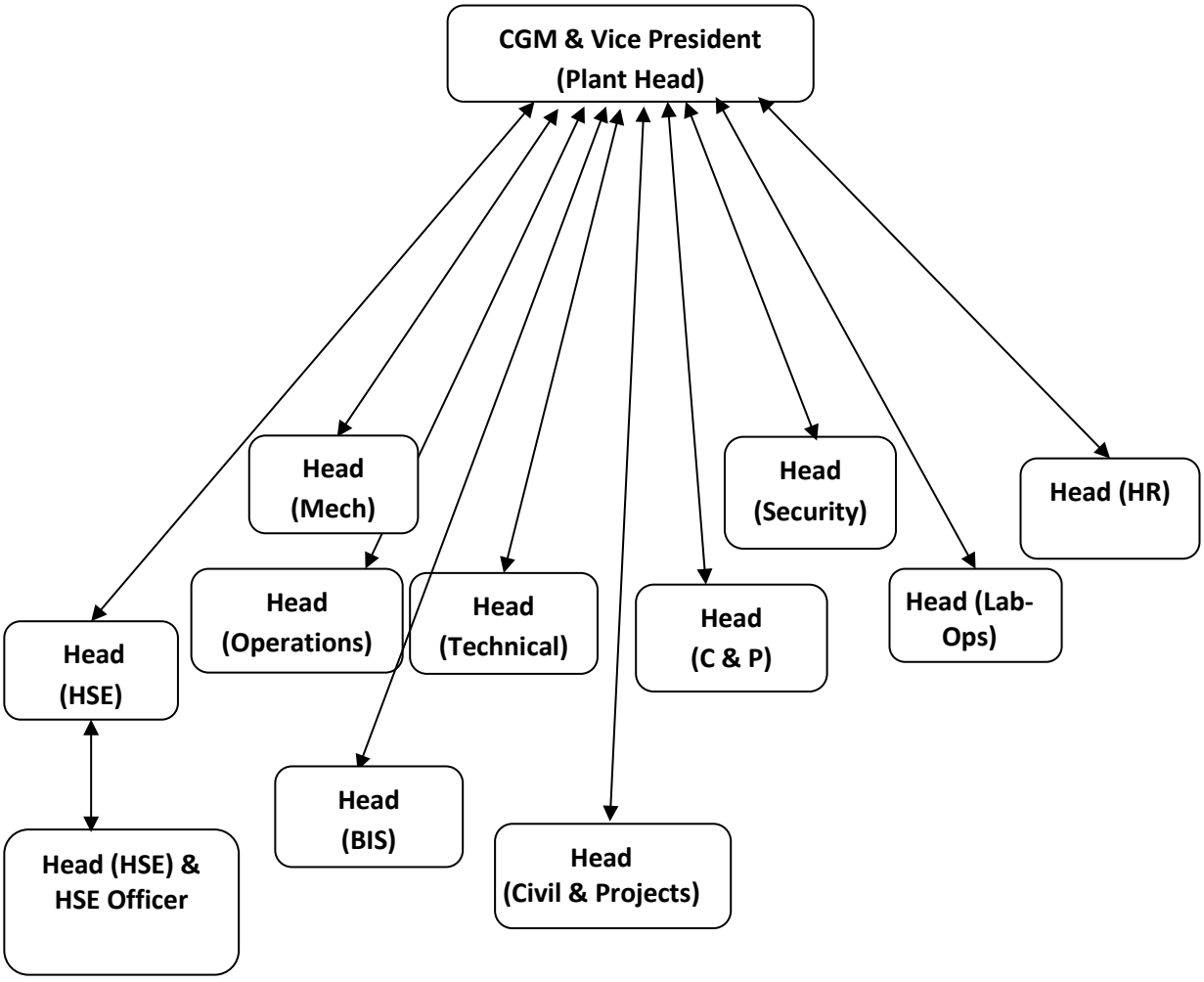
This document outlines the different aspects of the Environment management system like its members, structure, roles & responsibility of committee members and mode of functioning etc.

3. ENVIRONMENT MANAGEMENT CELL:

A) Members of Environment Management Cell:

Environment management cell shall be headed by CGM & Vice president (Plant Head) and other members are Head (Operations), Head (HSE), Head (Technical), Head (C & P), Head (Lab Operations), Head (HR), Manager (HSE), Head (Mech) and Jr. Engineer (Civil &Projects); the committee shall be reporting directly to CGM & Vice president (Plant Head)

B) Structure of Environment Management Cell:



Environment Management Cell

C) Roles and Responsibility of Environment Management Cell:

Roles and responsibility of Environment management cell are listed below, but not limited to:

- Advice management on issues related to environment.
- Identify activities which have potential to harm environment and to suggest measures to mitigate them.
- Create awareness among employees, contractors, visitors and public regarding the importance of environment protection and means to protect it by conducting tree plantations, campaigns, training programs, posters etc.
- Develop and implement the plans in order to reduce, reuse and recycle wastes.
- Plan, develop and implement environment management projects by coordinating with different departments, government agencies, NGO etc.
- Monitor and review different environment monitoring reports of ambient air, noise, vibration, stack emission, liquid effluents, and will take measures to ensure it is well below the permissible limit prescribed by central/ Kerala state pollution control board.
- Take review of the status of solid waste, hazardous wastes, battery waste, e-waste, biomedical waste, food waste, etc. that are generated either by operation or domestic activities of our plant.
- Ensure all activities of the plant are carried out in an environmentally safe manner and as mentioned in consent to establish and operate.
- Ensure Environment related statutory compliance, i.e. MoEF&CC, CRZ clearance, CPCB and KSPCB etc.
- Ensure adequate vegetation cover in the premise by develop and maintain green belt.
- Ensure plant and its premises are kept clean from waste.
- Ensure that all liquid effluent generated as a result of operation or domestic activities of our plant should be treated well to the standard as prescribed by central/ Kerala state pollution control board before discharging.
- Take measure to prevent/minimize/control plant fugitive emission, if any.
- Ensures proper handling (collecting and segregating), storage and disposal of hazardous wastes i.e. used oil, solid and biological waste.
- Identifying contactors qualified by central/ Kerala state pollution control board for disposing different categories of waste.
- Carry our work environment/industrial hygiene survey internally or externally for health hazards for employees.
- Arranging World Environment Day (WED) celebrations every year.

D) Functioning of Environment Management Cell:

- Environment management cell shall meet once in a month.
- Date, time, venue and the agenda of the meeting shall be identified by Head (EMC) Operations and the same will be informed to its members, at least one day in advance.
- The meeting shall be convened by the GM (Plant Head), initial discussion will be on the agenda, then on the progress of the decision taken on the previous meeting.
- Members can share any other information or raise any concerns pertaining to environment and the same will be discussed in detail.
- Minutes of the meeting points shall be recorded and a report for the same shall be prepared and documented.
- Meeting minutes shall be reviewed and concluded by the Head of the Environment Management Cell after listing out the outcome of the meeting and setting of goals.
- Members shall be responsible to execute the decision taken on the meeting, by coordinating with different departments, and the progress has to be reported in the next meeting.

E) List of team members & designation:

1. Shri. Yogananda Reddy; CGM & Vice President (Plant Head)
2. Mr.Veerasamy Manimaran – DGM (Operations)
3. Mr. Suresh P – Chief Manager (C & P)
4. Mr.Jaiganesh Dakshinamurthy – Chief Manager (Technical)
5. Mr. Debi Prasad Patro – Chief. Manager (HR)
6. Mr. Kiran Joy – Sr. Manager (Security)
7. Mr. L.S.Raja –Manager (Lab Operations)
8. Mr. Vijith T V –Manager (HSE)
9. Mr. Jitin Dev. –Manager (Mechanical)
10. Mr.Dileep AV – Dy. Manager (HSE)
11. Mr.Sreeram Kumar – Dy. Manager (BIS)
12. Mr. Anish Kumar – Jr.Engineer (Civil & Projects)

Note: EMC group common e-mail id emc_kochi@petronetlng.com is created for internal communication.