BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
(SOUTHERN ZONE), CHENNAI

Original Application No. 175 of 2020 (SZ)

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.....Applicant

-Vs.-

1. Union of India
Through its Secretary
Ministry of Environment, Forest & CC
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& 11 Others

.....Respondents

STATUS/COMPLIANCE BY ONGC TO THE JOINT COMMITTEE REPORT

The Respondent ONGC respectfully states as follows :

The Joint Inspection Report has been submitted by the Committee constituted by this Hon'ble National Green Tribunal, Southern Zone, Chennai vide order dated 08.09.2020 in the present Original Application. The Joint Committee has submitted its report based on its inspection of three major units of ONGC in Krishna Godavari (KG) Basin, namely,

a) Rajahmundry Asset,

b) Kesanapalli GGS and

c) Odalarevu GCS. (Gas Collecting Station)

The Committee has also provided comprehensive conclusions and recommendations.

The action taken by ONGC on the basis of the Joint Committee's observation/suggestions and the remarks to the same is given as follows:

S.No	Para and Page No.	Joint Committee's observations in its Report	Compliance/Reply by ONGC	Remarks
RAJAMUNDRY ASSET				
1.	Para 3.a.iv., Pg. 12	Natural gas produced from Kesanapalli (w) GGS (Gas Gathering Station 'GGS' for short), Tatipaka and Gopavaram fields contains high level of H2S (Hydrogen Sulphide) concentration in the range of 15-50 ppm from the flowing	It is submitted that sweetening is a process wherein a water-based chemical called as scavenger is inserted into the natural gas and the scavenger absorbs H_2S gas. As this process takes place in a closed loop, there is no possibility of escape of H_2S into the atmosphere. Moreover, this system is	ONGC has filed a brief report by the Chemistry Section-Surface Team, ONGC **(Annexure-1)** stating that Sweeting of gas is not a contributor to emissions as the process occurs in a closed loop system.

		wells. Liquid Scavenger system is being used in all the above installations to bring down level of H2S gas to less than 3ppm. Sweetening of gas is one of the contributor to emissions.	very effective and is a best industry practice for reducing H_2S from the natural gas. Hence sweetening is not a contributor to emissions.	Hence, ONGC follows an effective and best practice system that does not causes any emissions.
2.	Para 3.b.i., Pg. 13	From table-1a, 1b & 1c, it is clear that Gopavaram ETP and Kesanapalli ETP-II are not adequate in terms of capacity to treat the actual quantity of effluent generated. In Gopavaram GCS, in the CFO it is mentioned as 6.0KLD which is not matching with the actual effluent generated. The installations shall augment their treatment capacities.	It is submitted that Gopavaram ETP and Kesanaplaii ETP- II have the adequate capacity to treat the effluents and have the necessary CFO. i) In Kesanapalli-w, 02 no of ETP are in operation, first one is ED well disposal ETP(old ETP) with capacity of 750m3 and second one is Marine disposal ETP (New ETP) and combined capacity of ETP is 2250m3/day. Both ETPs are in operation by treating effluent as per standards of CPCB guidelines and committee produced the results of both ETP meeting the required standards for the disposal. ii) The average effluent generated from Kesanapalli GGS as mentioned in the report, is 2158m3 which is less than the total capacity of 2250 m3/day. Hence, the observations made by the committee are not correct. ii) Gopavaram was having one additional injection facility known as GMAE disposal facility (600m3/day capacity) along with Gopavaram ETP capacity of 600m3/day and total Capacity of disposal system is 1200m3/day. The effluent generated from Gopavaram is 1130m3/day, which is less than the combined capacity of Gopavaram effluent disposal system, i.e, 1200m3/day. The capacities of the effluent treatment facilities are	Both Keasanapalli ETP and Gopavaram ETP has adequate capacity to treat the effluents generated and is matching with the actual effluent generated. ONGC has also paid the necessary fees for obtaining such CFOs but the recent Auto Renewal format of CFO issued by the APPCB does not indicate the exact capacity of ETPs. Therefore, it may appears that the installations does not have the necessary capacity of ETPs. i) The project for marine disposal of effluents from Kesanapalli GGS was intimated to the APPCB and the Renewal for Consent for Operation of Kesanapalli GGS dated 28.02.2015 **Annexure- 33** highlighted the proposed commissioning and consent for the ETP at Kesanapalli (W)-GGS with marine disposal handling capacity of 1500 KLD. Thereafter, on 13.08.2015, the Consent Order for Establishment of Marine disposal at Kesanapalli was issued by the APPCB and the same is filed as **Annexure- 34.** Upon receipt of the Consent for Establishment of Marine disposal,

			also being augmented to process increased water production from wells.	ONGC started its establishment work in 2015 and completed the same in 2017. Thereafter, the implementation status of the Marine disposal facility at Kesanapalli was provided to the Environment Engineer, AP Pollution Control Board, RO Kakinada vide letter no. ONG/RA/HSE/CFO /2017-18/1029 dated 07.06.2017 **Annexure- 35** through an email dated 08.06.2017 **Annexure- 36**. The consent order for operation (CFO) for Kesanapalli GGS was valid up to 31.07.2018, accordingly renewal with additional new facilities was requested to APPCB where upon it was informed to apply for auto renewal of CFO through single desk portal of AP Industries. Accordingly CFO was applied after informing to APPCB about the Cost of new Installations as Rs. 7651.83 Lakhs, CFO renewal fees of Rs. 5,74,000/- was processed through single desk portal of AP industries vide Challan no. 4450770001623. **(Annexure- 37).** Subsequently, the Respondent sent a mail dated 28.06.2018 **(Annexure-38)** to APPCB, wherein it was stated that the CFO Renewals of the installations was made through "Normal mode" and upon recommendation of the APPCB, the Respondent wants

				to change it to "Auto- renewal mode". The details of additional installations and their cost incurred were sent to the APPCB through the same mail. Thereafter, the Respondent sent emails dated 29.06.2018 and 02.07.2018 **(Annexures- 39 & 40)** to the APPCB, wherein it was intimated that the said renewals of CFOs were filed through "Auto-renewal mode" and requisite fees were also been paid. The Respondent received an email dated 07.07.2018 **(Annexure- 41)** from the APPCB intimating that they were in receipt of "Auto- renewal applications" and in view of the increased infrastructures, additional fees was sought to be paid. Accordingly, an additional and balance fees of Rs. 2,00,000/- was paid thorough demand draft on the basis of email received from APPCB. The above increase in cost of installation was on account of new infrastructures for Pollution Control Systems such as New ETP with marine disposal. Since the application was processed through single desk portal of AP Industries, the Respondent received Auto-Renewal of consent order of Kesanapalli GGS dated 06.08.2018 **(Annexure- 42)** in which this new infrastructure for

				Pollution Control System for Marine disposal has not been reflected. The said Auto renewed Consent For Operation is valid till 31.07.2023. It is important to note that ONGC has paid the requisite additional fees that arose out of the increased infrastructure and investment for the Marine Disposal & New ETP facility which was already been considered in the Kesanapalli GGS consent order dated 13.08.2015. We have applied for CFO for enhanced capacity & Marine Disposal as well to the APPCB for their approval. It is also important to note that the APPCB was regular in conducting its inspections and analysis at the Respondent units. **Annexure- 43** is a proof for the same. It is a communication from APPCB to ONGC seeking payment of analysis charges, which proves that APPCB regularly inspects the Respondent units and is aware of the Respondent's activities. In November 2020, the Environment Engineer RO, Kakinada suggested to apply for separate CFO for marine disposal of treated effluent from New ETP of Kesanapalli GGS. As suggested by APPCB, Kakinada, separate CFO application (Application no. 1468310) for Marine disposal for treated effluent from

				Kesanapalli-W ETP was also applied on 3.12.2020 and ONGC has paid Rs 78,000 on 3.12.2020 to APPCB, Regional office, Kakinada. The online payment receipt for the same is filed as **Annexure-44.** Further, ONGC received another mail dated 29.12.2020 **(Annexure-45)** from APPCB seeking for CFE payment of Rs.1,52,000/- for processing the CFO for the marine disposal for the Kesanapalli-w ETP and for the increased investments. The Respondent paid the additional fees sought by APPCB and communicated the same through its letter dated 31.12.2020 **(Annexure- 46).** The said CFO application is pending before the APPCB, Head office, Vijayawada. Though the existing CFO is valid upto 31.07.2023, on the suggestion of APPCB we have also written a letter to APPCB, RO, Kakinada seeking amendment in Kesanapalli GGS CFO to reflect all the changes in the infrastructure. Thereafter, on 04.01.2021 a letter from APPCB to ONGC **(Annexure-47)** on CFO and CFE related issue with respect to Kesanapalli GGS was received. The Respondent replied to the said letter from APPCB through its letter

CONCLUSIONS AND RECOMMENDATIONS GIVEN BY THE COMMITTEE:

				dated 07.01.2021 **(Annexure- 48).** ii) The project for additional injection facility known as GMAE disposal facility (600m3/day capacity) was intimated to the APPCB and the Renewal for Consent for Operation of Gopavaram GGS dated 28.02.2015 **(Annexure- 33)** highlighted the proposed commissioning and consent for the ETP at additional injection facility known as GMAE disposal facility (600m3/day capacity). Thereafter, on 13.08.2015, the Consent order for Establishment of additional injection facility was issued by the APPCB and the same is filed as **Annexure- 34.** Upon receipt of the Consent for Establishment of Marine disposal, ONGC started its establishment work in 2015 and completed the same in 2017. Thereafter, the implementation status of the additional facility at Gopavaram was provided to the Environment Engineer, AP Pollution Control Board, RO Kakinada vide letter no. ONG/RA/HSE/CFO /2017-18/1029 dated 07.06.2017 **(Annexure- 35)** Based on the communication from APPCB for payment of additional fee,

				ONGC sent an email to APPCB dated 05.10.2018 **(Annexure-78)** submitting the excess CFE fee through DD for increased investments at Gopavaram GGS. Hence ONGC has ETP capacities to treat its effluents however, the Auto-Renewed CFOs does not mention the exact quantity details.
3.	Para 3.b.ii. Pg. 13	During inspection, it was observed that the drains in Tatipaka, Kesanapalli, Malkipuram and Odalarevu were blocked and filled with effluent, but the drains were not cleaned. It was also reported that whenever the drains are filled & choked with the sediments, they are manually cleaned but there is no standard procedure followed by the unit for cleaning of drains, frequency of cleaning and for removal of sediments.	The Respondent states that the Tatipaka complex where GCS and Refinery is stationed is spread about an area of 75 Acres, out of which 30% is maintained as Green Belt area. Considering the huge area under plantation, the leaves fall in the drains which sometimes get chocked, however, care is taken to clean the drains and the area regularly.	In conformance with the Joint Committee's report, ONGC has taken steps to clean the drains and the areas and filed **Annexure-2 & 3** which are the Notifications of Awards (dated 2.3.2020 and 18.3.2020) given to M/s. Pamula Prakash Deep for grass cutting work and maintenance work at Tatipaka GGS and Tatipaka Refinery, respectively. Hence complied.
4.	Para 3.c Pg. 14	In Rajahmundry Asset, old pipelines laid during 1988 and new pipelines laid during 2020 are existing; that the age of pipelines ranges from about 30 years to 3 months old. At present flow lines are replaced based on the condition of pipelines. There is no specific guideline or time frame for replacement of pipeline. The committee has positively observed at para 3c at page 14 of the Committee Report that ONGC	All the pipelines with the designed life of 20 Years are replaced periodically and as of now there is no use of pipeline beyond 20 years for transportation of Oil & Gas fluids. Moreover, some pipelines are changed much early considering the well fluid conditions. The allegation that there are no specific guidelines or time frame for replacement of the pipelines is incorrect and the Respondent has a Standard Operating Procedure (SOP) dated 24.12.2014 for Onshore Pipelines which is filed as **Annexure-4.** The	Respondent has a Standard Operating Procedure (SOP) dated 24.12.2014 for Onshore Pipelines and there is regular replacement of pipelines carried out in a systematic manner based on the health of the pipeline. ONGC follows the upgraded technology of using 3 LPE pipe. The measures taken by the Respondent for upkeep of pipelines and prevention for pipeline leakages

		has incorporated the upgraded technology of using 3 LPE (3 Layer Poly Ethylene) pre-coated pipes as they are stronger, and thus external corrosion of the pipelines have been minimized. Also it was observed that the replacement of all CTE coated pipelines are being done systematically in a phased manner by the facility. The Committee has also observed the measures taken by the Respondent for upkeep of pipelines and prevention measures for pipeline leakages at para 3.c.I and 3.c.ii at page 15 of the Committee Report.	details of pipeline replacement carried out by the Respondent in the Rajahmundry Asset from the year 2010 to 2021 are filed in **Annexure- 5.**	were observed by the Joint Committee. Hence the Committee's observations were complied.
5.	Para 4.a.i.a. Pg. 16	The Storm water from the installation is discharged into main drains laid outside the unit premises. During inspection the committee has observed that due to heavy rains and water logging, effluent was getting mixed with storm water and from the main drain it may ultimately join the sea.	There exists three storm water canals from Tatipaka Complex joining the main drain canal. One canal which covers the areas of liquid hydrocarbons, takes care of oil spillages. The said canal is provided with well-designed oil catcher and any oil spilled into the canal is recovered by them. Oil catchers are basically civil constructions within the storm water canal which separates oil from the storm water and then lead to the main drain. ONGC states that the effluents are treated in a closed system called Effluent Treatment Plants (ETP) and there is no possibility for the effluents to get mixed with the storm water.	Photographs of oil catchers located at storm water drains of Tatipaka GGS is filed as **Annexure-6.** Hence ONGC follows the Committee's suggestions.
6.	Para 4.a.i.b Pg. 16	The tilted plate interceptor and slop oil tank are not working properly. The capacity and	As on date, the tilted plate interceptor and slop oil tank are working. Tilted plate interceptor is an equipment within the	As advised by the Committee, communication have been initiated with OEM (Original Equipment

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		retention time of plate intercep	ETP which recovers the remains of the oil from the raw effluent. Whereas, Slope oil tank is a civil construction unit within the ETP (basically a closed iron tank) which is used in the process of collecting oil.	Manufacturer) to revamp the existing ETP at Tatipakka and Kesanapalli vide a proposal dated 28.06.2021 **Annexure-7** submitted by VA Tech WABAG Ltd. for revamping of existing ETP at Tatipaka and Kesanapalli. The observations are in progress and the contractor has quoted around 10-11 Cr, negotiations are in progress. The Joint Committee's observations - compliance in progress by the Respondent.
7.	Para 4.a.i.b. Pg. 16	The Tatipaka unit has obtained consent from APPCB (Andhra Pradesh Pollution Control Board) during 2015 and subsequently the consent was renewed (online consent monitoring and management system) but however post 2015 due to ageing of wells the quantity of producer water is increasing and there by the quantity of effluent generated has also increased. But the units have not amended the consent for the revised quantity effluent generated and that the existing ETP is not adequate in terms of capacity to treat the present effluent generated. As per the CFO issued to Tatipaka GCS on 27.02.2015 the quantity of effluent is 225KLD but presently	ETP capacity is adequate and the consent for revised quantity of effluent generated areobtained by ONGC .A Renewal order on Consent for Operation for Tatipaka GCS was issued by APPCB on 27.02.2015 with an allowed quantity of discharge from its ETP as 225KLD (Kilo Litres per day) is filed as **Annexure-8.** The refineries at Tatipaka Mini Refinery, Mandapeta GCS and Endamuru GCS are smaller ones and they do not have a separate Effluent Treatment Plant (ETP) for their own. And so, the effluents discharged from Mandapeta GCS and Endamuru GCS are transferred to the ETP at Tatipaka Refinery and treated over there. Total capacity of ETP at Tatipaka GCS is 500KLD which is well within its capacity to treat its effluents as well as the effluents from Tatipaka Mini Refinery,	As on date, the Tatipaka GCS, Tatipaka Mini Refinery, Madapeta GCS and Endamuru GCS have valid Consent for Operation with valid quantity of treatment of effluents. However, it can be observed that the new format of Auto-renewed Consent for Operation of GCS does not describe the increased infrastructure of the ETP and GCS or the ETP capacity or the quantity of effluents to be treated by the EPT per day or any other specifications related to the GCS. Therefore, the Committee has erroneously concluded that the Respondent does not possess a valid consent for the revised quantity effluent generated. Tatipaka GCS has a valid CFO, however,

		effluent generated is more than 500 KLD. In addition, 15KLD of effluent generated from Tatipaka mini refinery, Endamuru GCS and Mandapeta GCS has to be treated. Hence the existing ETP of capacity 500KL is not adequate to treat the present quantity of effluent generated.	Mandapeta GCS and Endamuru GCS. The Renewal of Consent for operation for Tatipaka Mini Refinery was issued by APPCB on 24.02.2015 **Annexure-9**, indicating the quantity of effluent to be discharged as 15KLD per day with the point of disposal as Tatipaka GCS. The said consent for operation with respect to Tatipaka Mini Refinery was again renewed on 31.10.2017 **Annexure-10** with a validity till 30.09.2022. For Mandapeta GCS, the Renewal order on Consent for Operation was issued by APPCB on 28.02.2015 **Annexure-11** with an allowed quantity of discharge as 37KLD per day and the point of disposal as Tatipaka GCS. For Endamuru GCS, the Renewal order on Consent for Operation was issued by APPCB on 28.02.2015 **Annexure-12** with allowed quantity of discharge as 40KLD per day and point of disposal as Tatipaka GCS. The wells produce more water while aging and hence the capacity to treat the effluents should also be increased by the ETPs through increased infrastructure. Therefore, while applying for the renewal of Consent for Operation of Tatipaka GCS, Tatipaka Mini Refinery, Mandapeta GCS and Endamuru GCS in the year 2018, the increased investments due to increased infrastructure of ETPs were mentioned in the application for renewal. APPCB sent a mail dated 07.07.2018	the enhanced quantity requirement has been applied to APPCB and amendment awaited from APPCB. However, it is submitted that the Tatipaka GCS has the required capacity of 500m3/per day, and depending on the production levels, which may vary. Hence the Joint Committee's suggestions were been followed by ONGC.

			Annexure-13 intimating that the increase in investments require increase in fee payment and sought for balance fee. In view of complying with the APPCB's demand, this Respondent paid the balance fee for increased infrastructures to the APPCB and intimated the same through a letter dated 18.07.2018 and the same is filed as **Annexure-14**. Subsequently, upon payment of the balance fee, the Auto-renewal of Consent for Operation for Tatipaka GCS, Mandapeta GCS and Endamuru GCS were obtained on 06.08.2018, which is filed as **Annexures- 15, 16 & 17** with a validity till 31.07.2023. So, as on date, the Tatipaka GCS, Tatipaka Mini Refinery, Madapeta GCS and Endamuru GCS have valid Consent for Operation with valid quantity of treatment of effluents.	
8.	Para 4.a.i.b. Pg. 17	Sludge drying beds are not in operation.	The sludge drying beds at the Rajahmundry Asset are currently under use. Basically, a sludge drying bed is an unit of ETP. The sludge from the oil settles at the bottom of the oil storage tanks due to sedimentation and they are collected and dried on the civil constructions called sludge drying beds. The dried sludge are stored in an isolated and confined place without any contamination. Later, these sludge obtained during the refinery process is disposed off as per Pollution Control Board Norms by awarding to third parties who will also adhere to Pollution	In conformance to the Joint Committee's suggestions, TERI (The Energy and Resources India) is in communication with the Respondent for a project on bio-remediation of the oily sludge and oil contaminated soil obtained from the refineries. The project proposal dated 17.02.2021 from TERI to ONGC for the Bio-Remediation process of sludge is attached as **Annexure- 18.** Hence work in progress and are being complied.

			Control Board Norms for their usage.	
9.	Para 4.a.i.c Pg. 17	TVOC (Total Volatile Organic Compound) levels measured using handheld PID (photo ionic detector) analyzer in the ETP area is varying from 2.2ppm to 4.0ppm	The range mentioned in the level of TVOC (Total Volatile Organic Compound) may be because of any rare Hydrocarbon spillage/leakage/accum ulation in the process area during that day of inspection and it does not occur on a regular/permanent basis. This is proved by the Committee's second inspection during Feb-2021 where in the TVOC levels are under limit. As Stated in the Joint Committee report the Respondent has been testing and maintaining the levels from their inception. The testing agencies such as Bhagavathi Ana Labs Pvt Ltd from Hyderabad and Hubert Enviro Care Systems (P) Ltd are accredited agencies of NABL (National Accreditation Board for Testing and Calibration Laboratories) which are being engaged by ONGC in carrying out these TVOC level tests at regular intervals.	Test Report of Bhagavathi Ana Labs Pvt. Ltd dated 18.05.2019 on the Ambient Air Quality parameters at Tatipaka Mini Refinery is filed as **Annexure-19.** Test Report of Bhagavathi Ana Labs Pvt. Ltd dated 25.05.2019 on the Ambient Air Quality parameters at the Tatipaka GGS is filed as **Annexure-20.** The Environmental Monitoring Report of Tatipaka Complex dated 21.11.2020 submitted by Hubert Enviro Care Systems Pvt Ltd. is filed as **Annexure- 21.** Hence, ONGC is following the Committee's suggestions on regular basis.
10.	Para 4.a.i.d. Pg. 17	There is no dedicated hazardous waste storage shed. ETP sludge, empty barrels, slop oil are stored haphazardly within the unit premises	The observation was complied and the Respondent submits that there are two new sheds have been constructed for dedicated usage of storing hazardous wastes.	In conformance to the Joint Committee's report, ppresently, the hazardous wastes have been shifted to these new sheds and store constructed in compliance of the committee's recommendations. Photograph of the two sheds is filed as **Annexure-22**.
11.	Para 4.a.i.e. Pg. 17	In old GCS plant, drain effluent is joining storm water drains and pH of drain effluent was 14 when the same was	The Respondent states that the effluents are treated in a closed system called Effluent Treatment Plants (ETP) and there is no possibility for the	Respondent is following the required standards of maintaing the pH level as per the Committee's observations.

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		joining storm water drain.	effluents to get mixed with the storm water drains. The recent analysis of pH level of storm water drain indicates 7.91 and the analysis report is filed as **Annexure- 23.** A recent Quality Analysis Test Report of Storm water drains at Tatipaka, GGS conducted by Hubert Enviro Care Systems Pvt Ltd for the period from January to June, 2021 is filed as **Annexure- 24.**	
12	Para 4.a.i.f. Pg. 17	LDAR (Leak Detection And Repair) of refinery is not carried out and that the TVOC (Total Volatile Organic Compound) levels near the valves of distillation column is around 5ppm and near sampling point is 70ppm.	In compliance to the Committee's observation, LDAR (Leak Detection And Repair) system is carried out now. Also, the sampling points have been modified to closed loop system instead of open loop system and thereby the TVOC level has come down.	The Respondent has filed Photographs on change of sampling points.- as **ANNEXURE- 25.** Thus the Respondent has compiled with the observation of the Committee in this regard.
13	Para 4.a.i.g Pg. 17	In the gas dehydration unit, with in the re-boiler system, rich glycol (containing moisture) is heated to 200 deg C and moisture is knocked out into the atmosphere. During knocking out some glycol vapors is scarried along with moisture.	The Respondent states that the TEG (Tri Ethylene Glycol) process is used worldwide for natural gas dehydration. This is a best industry process that is used to remove water vapors from the natural gas. Herein, the entire set up is referred to as Gas Dehydration Unit (GDU) and it is a closed unit without any possibility of leakage. Natural gas obtained from the wells contain water vapor which need to be removed to prevent corrosion of equipment and pipelines. Under the TEG (Tri Ethylene Glycol) process, to remove water vapor from natural gas, a chemical (in liquid form) called, TEG(Tri Ethylene Glycol) is fed into the natural gas chambers. The TEG liquid absorbs water vapors from the natural gas and becomes wet TEG.	TEG does not escapes with water vapour during the Knocking out process. The photograph showing the GDU without any vapour emission is filed as **Annexure- 26.** Hence, ONGC is following the Joint Committee's observation that TEG is not escaped to atmosphere.

			Thereafter, the wet TEG (TEG absorbed with water vapor) is sent to a re-boiler system. Upon heating the re-boiler system at 200 deg Celcius, the water vapor gets separated from the TEG and is let out. This phenomenon is referred to as Knocking out. It is to be noted that the the boiling point of TEG is 240 deg Celcius, i.e only at 240 deg Celcius, TEG can transform from liquid state to gaseous state and at 200 deg Celcius, therefore the TEG remains as liquid and cannot escape as a vapor during Knocking out process.	
14	Para 4.a.i.g Pg. 17	There was odour nuisance in the area.	The Respondent submits that there is no complaint received from the nearby villages for odour nuisance. Also, it is important to note that 35% of the total area of the Tatipaka complex is earmarked with green belt so as to arrest any odour nuisance.	ONGC is maintaining its unit without odour nuisance and hence the Joint's Committee's suggestions have been complied.
15	Para 4.a.ii. Pg 19	From table 5b, based on effluent results it is concluded that the unit is meeting the standards w.r.t deep well injection. In the borewell samples, benzene, TPH, O&G and phenols are below detection limit. Since the key indicator parameters are not present in the borewell water samples, based on the current analysis report the committee opines that ground water surrounding Tatipaka GCS and refinery is not contaminated.	The Committee has positively observed that the deep well injections are done correctly and there is no ground water contamination.	Committee has observed that there is no ground water contamination due to ONGC's operations.
16	Para 4.a.iii Pg. 20	During the first round of monitoring it was observed that the unit was complying with ambient air quality standards w.r.t all	Benzene is a constituent of Crude oil and Petroleum products produced in refineries and of course ONGC's main business is Exploration and	With confirmance to the Joint Committee's report, ONGC is maintaining the Benzene levels

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		parameters except Benzene. The unit has taken corrective measures because of which during the second round of monitoring, the unit was, complying with ambient standards w.r,t Benzene also.	Production of hydrocarbons. Regarding the Benzene content in ambient air, a relevant study conducted and published by Central Pollution Control Board (CPCB) in its newsletter called "Parivesh" filed as **ANNEXURE- 27** states that crude oil contains 4-5% Benzene and its homologues (~40000-50000 ppm). Further there is every chance of Benzene release in to the environment while handling petroleum and its products as brought by CPCB in its report. As recognized by the committee in its report at para nos. 4.a.i and 4.c.i.3, there were heavy rains during the committee's first visit in the month of December 2020, which could be the reason of heavy rains containing traces of crude oil and thereby leading to the reason for high Benzene content in the Tatipaka Refinery Area. Evidently, during the second visit of the Committee, the level of Benzene has reduced significantly. Benzene Levels are naturally varying in the areas of Petroleum Pumps, and in the instant case where the industry is such of refining the petroleum and petroleum products in Tatipaka Complex, ONGC and considering the nature of the industry, the levels do vary. However, the Average Benzene content during first round monitoring in Tatipaka was 964.5g/m3 which was well within OSHA exposure limit of 1622g/m3 and plant operations area cannot be compared with ambient air quality standards.	within the prescribed limits.

17	Para. 4.a.iv Pg. 20	Crude furnace stack was monitored during December 2020. From the results it is observed that the unit is complying with stack monitoring results.	Tatipaka Unit has complied with stack emission norms.	With confirmance to the Joint Committee's report, ONGC is maintaining the stack emissions.
18	Para no. 4.a.v. Pg. 21	The committee monitored ambient noise levels both during day time and night time. From the noise monitoring, it is observed that the unit is complying with ambient air quality standards w.r.t. noise. From the Ambient noise monitoring, the Noise level at the premises at 4-locations, was monitored and was reported that the noise level was within the permissible limits of 75db	Hence, as per the Joint Committee's report there is no noise pollution.	With confirmance to the Joint Committee's report, ONGC does not cause any noise pollution.
19	Para no. 4.a.v. Pg. 21	After analysis of soil samples collected from the nearby villages, reported in its report at that there is no soil pollution.	Hence, as per the Joint Committee's report there is no soil pollution.	With confirmance to the Joint Committee's report, ONGC does not cause any soil pollution.
20	Para no. 4.a.v. Pg. 21	Tatipaka unit is meeting the standards with resect to Deep Well Injection.	As per the Joint Committee's report, ONGC is meeting the standards with respect to Deep Well Injection.	With confirmance to the Joint Committee's report, ONGC is maintaining the standards with respect to Deep Well Injection.
21	Para no. 4.a.v. Pg. 21	Also it was reported that parameters of Benzene, TPH, O&G and phenol are below the detection limit in the bore water samples, thus opining that the ground water surrounding Tatipaka GCS refinery is not contaminated.	As per the Joint Committee's report, ground water surrounding Tatipaka GCS refinery is not contaminated.	With confirmance to the Joint Committee report, ONGC does not cause any ground water contamination.
22	Para no. 4.a.vi. Pg.21 & 22	It was observed that from the calculation of environmental compensation from Tatipaka refinery, the Committee has	The Respondent states that the TEG dehydration system leading to knock out of moisture along with glycol vapours doesnot cause emission of	In the light of the Respondent's submissions and evidences that the TEG dehydration system is not a major source for

		stated in its report as follows; *"Date of non-compliance: The unit has installed TEG dehydration system during November, 2015 without recovering glycol vapors from moisture and the moisture was knocked out which was one of the major source of benzene. Post 2015, the unit has not amended the consent for the actual quantity of effluent generated. Present ETP is not adequate in terms of capacity to treat the actual effluent generated. The unit has not maintained any records for hazardous waste disposed. During first round of monitoring ambient benzene was in the range of 92 to 2051 µg/m3 against the standard limit of 05 µg/m3. Considering these points the date of non- compliance is considered from 01.11.2015."* The Environmental compensation has been calculated as Rs.7,28,62,500/- taking the date of non-compliance as November, 2015, during which the TEG gas dehydration system was installed at the Tatipaka facility. The same is stated in the Committee's report at page no. 22 as follows: *"TEG gas dehydration is installed during November, 2015 post accident at M/s. GAIL facility due to which the glycol vapors are let out into*	benzene. The introduction of TEG dehydration system is for the purpose of removing water vapour from the natural gas. The TEG used in dehydration of natural gas and benzene are completely different and are having different structural formula. And therefore the finding that concentration of benzene due to TEG dehydration system is not factualy true. It is a best industry practice in the oil industries to adapt the TEG based dehydration system. Also, it is a robust system accepted and followed world wide. Accordingly, the Respondent has introduced and currently using the TEG dehydration system. Benzene is a constituent of Crude oil and petroleum products produced in refineries and of course ONGC's main business is Extraction & Production of hydrocarbons.	Benzene in the Tatipaka complex; that the present ETP at Tatipaka complex is adequate enough to treat the actual effluents generated and that the unit is maintaining proper procedure and standards in disposing off the hazardous waste, this Hon'ble Tribunal may be pleased to dismiss the Environment Compensation calculated by the Committee for Tatipaka GCS.

		environment while knocking out moisture. At Tatipaka facility this is one of the main source of ambient Benzene. Hence for assessment of violation, date is taken as 01.11.2015"		
KESANAPALLI GGS				
23	Para no. 4.b.i.1. Pg. 22	Effluent is getting mixed with storm water and storm water is getting discharged into main drain outside the unit premises. In addition the leaves and garden waste is in the drain and getting putrefied in the drain itself.	During the rainy season, drains are water logged at Kesanapalli GGS due to falling of leaves from nearby trees. These drains are being cleaned periodically. The leaves and garden waste in the storm water drain has been cleaned. The leaves and garden waste in the storm water drain is cleaned and its photograph is filed as **Annexure- 29**.	The Respondent states that the effluents are treated in a closed system called Effluent Treatment Plants (ETP) and there is no possibility for the effluents to get mixed with the storm water drains. However, as an additional precaution, Oil catchers will also be constructed and is under the Tendering process. As per the Joint Committeee's suggestions, ONGC is periodically cleaning the storm water drains; the leaves and garden wastes are cleaned. Hence the observations were compiled by the Respondent.
24	Para 4.b.i.1. Pg. 22	pH (pH is a measure of how acidic/basic water is) of the storm water was 12.	The Respondent submits that the recent Test Report of pH analysis of Storm water drains at Kesanapalli GGS on 09.12.2020 reflects that the pH of the storm water drain was 7.84 and the same is filed as **Annexure- 28.**	Thus, the Respondent has compiled with maintaining the pH of the storm water drains.
25	Para 4.b.i.2 Pg. 22	The effluent stored in treated effluent sump was red in color and pH was more than 12.	The Respondent states that the painter has mistakenly poured the waste water into the treated effluent sump after cleaning the paint brush, which was unknowingly done by	Hence, the Respondent has compiled with cleaning the valve pit.

			him. The valve pit is cleaned immediately and now it is clear. The photographs of before and after cleaning of the said sump is filed as **Annexure- 30.**	
26	Para 4.b.i.3. Pg. 23	There is no dedicated hazardous waste storage sheds.	In compliance to Committee's observations, dedicated sheds have been constructed for storage of Hazardous waste such as Lube Oil and batteries. Photograph of the same is filed as **Annexure- 31.**	Thus, the Respondent has compiled with the construction of sheds dedicated for storage of hazardous wastes.
27	Para 4.b.i.4 Pg. 23	The unit was disposing the effluent by means of marine disposal but however the unit has not obtained necessary permissions from APPCB for marine disposal. Further, part of the pipeline used for deep sea disposal (1000m stretch of pipeline taking deep sea) is broken and washed away. Presently the unit is disposing the effluent in the coast.	ONGC has the CFE and Approval of CRZ for the Kesanapalli ETP capacity to treat its effluents and for marine disposal. The initial Marine disposal pipeline was laid after applying and paying the requisite additional infrastructure fee though Auto Renewal Mode. However, some part of the Marine Disposal pipeline was broken and washed way due to high tides East Coast of Bay of Bengal and therefore, the works for laying the new pipeline where the pipeline got broken and washed away is being replaced and the works are in progress and expected to be completed by Feb'2022, considering the fair weather window of East Coast of Bay of Bengal	The ONGC has the necessary CFO and ETP capacities to treat its effluents and it is pertinent to note that that the Auto-Renewed CFOs does not mention the exact quantity. The initial Marine disposal pipeline was laid after applying and paying the requisite additional infrastructure fee though Auto Renewal Mode. However, some part of the Marine Disposal pipeline was broken and washed way due to high tides East Coast of Bay of Bengal and therefore, the works for laying the new pipeline where the pipeline got broken and washed away is being replaced and the works are in progress and expected to be completed by Feb'2022, considering the fair weather window of East Coast of Bay of Bengal. As a short-term measure, 8" Casing pipe about 50~60

				m was hooked up with flexible joint at GRE dislocation point for the safe disposal of the produced water after the treatment as per pollution control board norms. However, this is a temporary arrangement made till permanent line is laid. Meanwhile, created temporary provision for facilitating disposal of New ETP treated effluent to old ETP deep wells injection for minimizing the marine disposal system. The quantity of treated effluent quantity by marine disposal near the coast has been substantially reduced by treating the effluent in the effluent disposal wells at a depth of more than 1000 meters.
28	Para 4.b.i.4 Pg. 23	The unit had obtained CRZ clearance for laying of pipelines.	The CRZ Clearance dated 11.08.2016 was issued by the Ministry of Environment, Forest and Climate Change, which is a consent for laying of pipelines for marine disposal of effluents at Kesanapalli GGS.	Hence, ONGC has the necessary CRZ clearance for laying pipelines for marine disposal.
29	Para 4.b.i.5. Pg. 23	Water logging was observed at the entrance of the unit.	Water logging observed was due to the heavy rainfall in the are during the Joint Committee's visit. The entire area near the entrance gate was cleaned; the said area was levelled and grass is being grown in the area. Photographs showing clean entrance area- **Annexure 49.**	In conformance to the Joint Committee's suggestion, ONGC cleaned the entire area near the entrance gate. Hence Compiled.
30	Para 4.b.i.6 Pg.23	In the ETP area, the unit had covered with fresh soil. The committee excavated the portion of the soil and found that black oily soil was present below upto depth of	The Respondent submits that oil soaked soil which was found during digging was removed and dumped in sludge pit for bio-remediation. Now, the area has been covered with fresh soil.	In conformance to the Joint Committee's suggestion, the Respondent has compiled with the above said observations.

		1m. On enquiring it was informed that there was oil spill and the unit had covered with fresh soil.	Photograph showing the removal of oil- soaked soil is filed as **Annexure-50**.	Hence compiled.
31	Para 4.b.i.7. Pg. 23	Opposite to new ETP boundary wall, waste oil & sludge is dumped on land to an extent of two to three acre and that two to three acres.	The Respondent submits that the two to three acres of land is a low laying area and so the water gets logged opposite to ETP. Now the area is levelled; water logging was cleared and the entire area was cleaned. Photograph showing the cleaned area opposite to new ETP boundary wall is filed as **Annexure-51**.	As stated in the Joint Committee's report, the water logging was cleared and the entire area was cleaned. Hence compiled.
32	Para 4.b.ii. Pg. 25	From the ground water results it is understood the ground water is not contaminated due to activities of M/s ONGC and M/s GAIL. It was reported that the ground water was analysed in and around the Kesanapalli ETP and it was concluded based on the analysis results that the ground water was not contaminated.	The Respondent submits that Ground water was not contaminated and has been confirmed by the Joint Committee in its report.	With confirmance to the Joint Committee's observations, ONGC does not cause any ground water contamination.
33	Para 4.b.ii Pg. 26	It was observed that the effluents from the Kesanapalli GGS are analysed and were sent into deep well ejection. Effluent samples are complying with the deep well standards.	The Respondent submits that Deep well injections are carried out properly and the effluents are complying with the deep well standards.	With confirmance to the Joint Committee's observations, ONGC is complying with the deep well standards.
34	Para 4.b.iii Pg. 27	In around 5 acres of land opposite to DG room, the effluent & sludge is accumulated. From the sediment sampling it was learnt that mercury is present in the range of 201 mg/Kg.	The Respondent states that after cleaning the area opposite to the DG room and after removal of water logging, growth of trees is visible in the area. The photograph showing growth of trees in the said area is filed as **Annexure- 52**. The Respondent further states that the Environmental Monitoring Report of Kesanapalli Complex	Hence, ONGC has cleared the effluent and sludge accumulated opposite to DG room and is maintaining the mercury level at Below the Limit of Quantitation (BLQ).

			dated 21.11.2020 submitted by Hubert Enviro Care Systems Pvt Ltd. Shows that the mercury level is BLQ (Below the Limit of Quantitation). The Environmental Monitoring Report is filed as **Annexure-53.**	
35	Para 4.b.iii. Pg. 27	The unit shall dismantle the abandoned sump present in the Kesanapalli GGS and that the effluent present in the sump shall be treated properly in ETP and after complying with APPCB discharge standards shall be disposed as per condition stipulated in CFO.	The Respondent has compiled with the committee's observation that the effluent present in abandoned sump was emptied by treating the effluent as per the APPCB discharge standards. The sump is isolated and dismantled now and it is kept only for the purpose of rain water harvesting. The photograph showing isolated and dismantled sump is filed as **Annexure-54.**	Hence, the Joint Committee's observations were been complied.
36	Para 4.b.iii Pg. 27	The committee observed that naturally the beach sand in kesanapalli area is having high iron content due to which the colour of the beach sand is slightly black.	The Respondent submits that the beach soil is black due to the rich iron content and not because of any soil pollution.	Hence, the Committee has confirmed that the black colour of beach soil has nothing to do with ONGC's operations.
37.	Para 4.b.iv. Pg. 28	The Committee in its report stated that for calculation of Environmental Compensation, The unit was not granted permission by APPCB for deep sea disposal. As per CFO issued by APPCB, treated effluent has to be disposed by deep well injection. As per records, unit is disposing effluent by sea disposal since february, 2018 hence date of non-compliance is taken as 25.02.2018 to 25.02.2021 =1096 days (after 25.02.2021, APPCB may levy additional compensation till compliance is achieved.	Kesanapalli- Marine disposal unit has the necessary permissions for its operation and has a valid CFO (Consent for operation) and CFE (Consent for Establishment). Hence this Hon'ble Tribunal may be pleased to dismiss the Environment Compensation calculated by the Committee for Kesanapalli GGS.	The ONGC has the necessary CFO and ETP capacities to treat its effluents and it is pertinent to note that that the Auto-Renewed CFOs does not mention the exact quantity. The initial Marine disposal pipeline was laid after applying and paying the requisite additional infrastructure fee though Auto Renewal Mode. However, some part of the Marine Disposal pipeline was broken and washed way due to high tides East Coast of Bay of

		EC= Rs. 4,11,00,000/-		Bengal and therefore, the works for laying the new pipeline where the pipeline got broken and washed away is being replaced and the works are in progress and expected to be completed by Feb'2022, considering the fair weather window of East Coast of Bay of Bengal. As a short-term measure, 8" Casing pipe about 50~60 m was hooked up with flexible joint at GRE dislocation point for the safe disposal of the produced water after the treatment as per pollution control board norms. However, this is a temporary arrangement made till permanent line is laid. Meanwhile, created temporary provision for facilitating disposal of New ETP treated effluent to old ETP deep wells injection for minimizing the marine disposal system. The quantity of treated effluent quantity by marine disposal near the coast has been substantially reduced by treating the effluent in the effluent disposal wells at a depth of more than 1000 meters. Hence the Hon'ble Tribunal may be pleased to dismiss the Environmental Compensation.
ODALAREVU PLANT				
38.	Para 4.c.i.1.	The committee observed that ETP is	The Respondent submits that the ETP is functioning properly.	The ETP may not be function during the Joint Committee's

	Pg. 28	not functioning properly.	The ETP is operated in batches depending upon the load to ETP. It is important to note that Odalarevu is a small refinery unit that has a capacity of 60 KLD per day of effluents to be treated in its ETP. The said data is also given at Table 1.a. of the Committee's Report. As stated in the Joint Committee's report, Various Parameters of the effluents treated at ETP from 2017 to 2021 is filed as **Annexure- 55.** The elaborate details about the quantity of effluents treated at Odalarevu ETP along with their parameters from the year 2017 to 2021, proves that the ETP in Odalarevu is very much in operation. The valid Consent for Operation and Consent for Establishment obtained by the Odalarevu is filed as **Annexures- 56 to 60**.	visit when the load was very low. But the ETP is very much in operation and all necessary CFO and CFE are available for functioning of ETP in Odalarevu.
39.	Para 4.c.i.1. Pg. 28	Oil is removed from slop oil tank, the effluent is stored in holding ponds.	The Respondent submits that a settling tank has been added to the ETP process on 28.06.2018 to increase the settling time for efficient separation. In conformance to the Joint Committee's report, Notice of Award placed for hook up of the 70 m3 settling tank in pursuit of the improvement is filed as **Annexure- 61.** The Respondent further adds that there exists a three step process before the water is transferred to holding ponds to ensures efficient oil separation.	Hence, the observations made by the committee was compiled.
40	Para 4.c.i.1. Pg. 28	Multimedia filters were not in operation on the day of the visit.	The Respondent states that multimedia filters were not in operation during the Committee's visit because the ETP is run intermittently depending on the load.	Hence, Multimedia filters are in operation and were not in use during Committee's visit because of no load.

41	Para 4.c.i.1. Pg. 28	Effluent is disposed on the ground without treatment.	The Respondent states that ONGC is ensuring that the effluent is treated before being injected to the Effluent Disposal (ED) wells. Treated Effluent is being injected below 1000m in ED (Effluent disposal) wells and the quality is maintained as per APPCB standards. Effluent water is not disposed on the ground. Standard being followed as in the case of re-injection in abandoned well, the effluent have to comply only with respect to suspended solids and oil and grease at 100 mg/l and 10 mg/l, respectively. In conformance to the Joint Committee's suggestions, various Parameters of the effluents treated at ETP from 2017 to 2021 is filed as **Annexure- 55**	Hence ONGC is not disposing the effluent on ground without treatment and the observations by the committee are complied.
42	Para 4.c.i.2 Pg. 28	Severe odour nuisance and VOC (volatile organic compounds) levels inside unit premises was varying from 4.0 ppm to 6.0 ppm when measured using handheld PID (photo ionic detector) analyzer.	The Respondent submits that the ambient air quality is being tested regularly by M/s SV Enviro Labs & Consultants, Visakhapatnam, a NABL & NABET accredited Laboratory recognized by MOEF & CC, Govt. of India, New Delhi. The results are complying to the standards of APPCB. It is pertinent to note that the VOC levels in the first round of VOC (volatile organic compounds) monitoring by NGT committee is 0.122 ppm against the 0.1 ppm of LOQ (level of quantification). However, VOC levels are found to be BLQ (Below level of quantification) in the Second round of VOC monitoring. Ambient air quality test reports dated 07.01.2021 is filed as **Annexure- 62**	Thus, the observations made by the committee are complied.

43	Para 4.c.i.3. Pg. 29	During the visit, there were rains and water logging was observed in the area. Both effluent mixed with storm water was present in the unlined lagoon in more than 10acres of land between M/s GAIL and M/s ONGC terminals. The pH of the lagoon Water was around 5.	The Respondent submits that the water logging in the low lying area within the installation during the Committee visit was due to unprecedented rains before the Committee visit. Separate CRWS (Contaminated Rain water system) system is in place to treat rain water from process area. MEG barrels were placed near the referred lagoon having an area of 1.25 acres (not 10 Acres) during construction activities. Unintended and inadvertent leakage of one of the barrel of MEG in the area might have resulted into low pH value in the sample. The same has been rectified and care will be taken to ensure such instances do not occur in the future. A photograph of the CRWS at Odalarevu plant is filed as **Annexure- 63**. The photograph showing removal of MEG barrels and no water logging in the area is filed as **Annexure- 64**.	Thus, the Respondent has complied with the observations made by the Committee.
44	Para 4.c.i.4. Pg. 29	The storm water drains are completely clogged and were filled with thick oily sludge	The storm water drains were clogged due to growth of vegetation in storm water drain and not due to oily sludge. The storm water drains are being cleaned periodically in a phase wise manner to remove the vegetation. In conformance to the Joint Committee's Report, the photograph showing vegetation in storm water drain and the cleaning of storm water drain is filed as **Annexure- 65.** Moreover the Committee also observed the growth of healthy fishes in the channels.	Thus, the Respondent has complied with the observations made by the Committee.

			Thus, the Respondent has complied with the observations made by the Committee.	
45	Para 4.c.I.5 Pg. 29	The unit is facing water logging issues since 2017.	The Respondent submits that steps have been taken to clear the water logging. The work order dated 03.04.2019 issued by ONGC for cleaning of storm water drains near Odalarevu GGS is filed as **Annexure- 67.** The payment for contract work for cleaning of storm water drains near Odalarevu GGS is filed as **Annexure- 68.**	Thus, the Respondent has complied with the observations made by the Committee.
46	Para 4.c.i.5 Pg. 29	Reported that ETP is not properly working since 2017 and the unit is yet to replace worn out pumps.	The Respondent states that during the Committee's inspection, in-house repair of ETP pumps was in process and the operation with standby pump was continuing due to low load. Additional new ETP will be commissioned shortly which will replace the existing ETP. However, ONGC followed the observations of the Committee and the existing ETP pumps were serviced and painted to control corrosion. The Respondent submits that the photographs are filed as **Annexure- 66**.	ETP is meeting the requirements of injection into abandoned wells as brought out in the Committee Report and is working properly. Also, the existing ETP pumps were serviced and painted to control corrosion. Hence, the observations by the Committee was compiled.
47	Pg. 31	The raw effluent is having benzene in the range of 603micro gram/L to 1159 micro gram/L. Benzene being volatile in nature escapes intot he atmosphere when effluent is stored in holding tanks.	The Respondent complied with the Joint Committee's observation and Benzene levels are BLQ (Below Level of Quantification) during the second visit at February, 2021.	Hence, the observations by the Committee was compiled.
48	Pg. 31	The treated effluent is meeting the standards with respect to deep well injection	Based on the Joint Committee's report the treated effluent is meeting the standards with respect to deep well injection	With conformance by the Committee, the unit is meeting the standards with respect to deep well injection.
49	Pg. 31	The samples are collected from main storm water drain outside the unit	The Respondent submits that samples are not contaminated with effluents.	With conformance by the Committee, the unit is not

		premises and found that it is not contaminated with effluent.		contaminated with effluent.
50	Pg. 31	The installation is located very close to the sea and there were no bore well near the installation hence committee could not conduct ground water sampling.	--	--
52	Para 4.c.v. Pg. 32	From the sediment analysis results of the report, it is observed that sediment samples Odalarevu ETP and near sludge storage tank is not contaminated.	It is pertinent to say that the sediment samples of Odalarevu are not contaminated.	With conformance by the Committee, the unit is not contaminated with effluent.
53	Para 4.c.ii Pg. 29	It was observed in the report about the non-compliances observed in M/s GAIL terminal such as Pigging operations are carried out once in six months to remove the waste deposited in pipelines and that the pigging waste are hazardous in nature; that the unit is storing the waste in open near to the pipelines.	The Respondent submits that the said observations were related to M/s. GAIL and ONGC has no comments to make. ONGC is also maintaining the cleanliness of storm water drain. Work order dated 03.04.2019 issued by ONGC for cleaning of storm water drains near Odalarevu GGS is filed as **Annexure- 67** and the payment for contract work for cleaning of storm water drains near Odalarevu GGS is filed as **Annexure- 68.**	ONGC is also maintaining the cleanliness of storm water drain.
54	Para 4.c.vii Pg. 32	The Committee has calculated the Environmental Compensation as Rs. 5,68,50,000/- based on violation of CFO (Consent for Operate) conditions, sea disposal without obtaining permission from APPCB and that the ETP is not working since 2017. The Respondent denies all these allegations based on which the Environmental Compensation has been calculated.	The Respondent submits that sea disposal of effluents is not carried out in Odalarevu and the Committee's calculation of Environmental Compensation based on sea disposal of effluents is erroneous and baseless. The CFO conditions are not violated. CFO for Odalarevu plant was obtained for Sub Surface Disposal of the treated effluent water into effluent disposal wells for Odalarevu Onshore Terminal. Odalarevu Onshore terminal has strictly adhered to the CFO conditions laid down by APPCB. The	In the light of the above mentioned fact that ONGC Odalarevu Onshore Terminal has always been operating in line with the norms and conditions laid down by CPCB/APPCB in its efforts for environmental protection. It is reassured that ONGC Odalarevu Onshore Terminal is neither contributing towards the pollution of environment nor contributing to any kind of undesired emissions. Therefore, the

			parameters required for sub surface disposal are always achieved and is being demonstrated even during the Committee visit and periodical APPCB visits and their samples collection. Proper documentation on this is also maintained. The ETP is functioning properly and is operated in batches depending upon load to ETP. Since the effluent generation was less, running the ETP for 10 hrs - 13 hrs a day shall suffice the requirement. The ETP was not running during the Committee visit because of the low load. The Committee collected water & sediment samples, conducted ambient air quality monitoring during December, 2020 and carried out exclusive ambient VOC monitoring during February, 2021. VOC levels are found to be BLQ (Below level of Quantification) in VOC monitoring. The same is also been indicated in the Annexure-IVb of the Committee Report. Thus it may be seen that due care and caution is being exercised in controlling water pollution.	Hon'ble tribunal may dismiss the Environmental Compensation calculated by the Committee.

CONCLUSIONS AND RECOMMENDATIONS GIVEN BY THE COMMITTEE:

The recommendations made by the Committee were suitably addressed by this Respondent and appropriate compliances were carried out accordingly. The following table sets out the Committee's recommendations and the respective compliances/action carried out by the Respondent:

S.No	COMMITTEE'S RECOMMENDATIONS	ONGC'S COMPLIANCE
1.	The design life period of pipes are 20 years. In KG basin, CTE pipelines older than 30 years are still in use. The unit shall prepare guidelines or time frame for replacement of old pipelines. Very Old CTE coated pipes may be replaced with 3 LPE pre-coated pipes.	Out of total 989km pipe line present as on date in Rajahmundry asset, 600km pipe line having life of less than 10 years and remaining pipe line of 350 km having life of less than 20 years. None of the pipe line with more than 20 years of life were in use. **Annexure- 5** filed in the typed set of papers provides the details of pipeline replacement carried out by ONGC in the Rajahmundry Asset from the year 2010 to 2021. The Respondent has a Standard Operating Procedure (SOP) dated 24.12.2014 for Onshore Pipelines and the extract of the same is filed as **Annexure-4.** Every year, there is plan of the replacement of the pipe line. Measures in place for upkeep of pipelines are as follows: 1. Use of corrosion inhibitors to mitigate internal corrosion of pipelines 2. Installation of Gravel packing and sand filters in the sand bearing gas wells to mitigate sand incursion and prevent internal leakage due to sand abrasion. 3. Periodic hydro testing of pipelines to check the integrity of pipelines. 4. Identification and systematic replacement of old and vulnerable pipelines. 5. Ultrasonic thickness measurement of 235 KM length had been done to assess the integrity of pipelines. 6. Use of Hi-lo Safety valves on high pressure wells and monitoring of gas flow rates using automatic SCADA measurement at GCS The Respondent is regularly checking the conditions of the pipelines. The **Annexure- 69** is a Certificate dated 04.09.2019 issued by ONGC to M/s. Sanmarg projects Pvt Ltd for conducting Corrosion survey at Rajahmundry Asset. Hence complied.
2.	Presently nine out of 20 flowing wells are provided with gravel pack to minimize sand entrainment. The unit shall provide gravel pack near the perforation to all flowing wells to reduce entrainment of sand in pipelines thereby reduce the chances of pipeline leakage.	ONGC gives high priority for safety and within a very low span of time, they performed the root cause analysis of the reasons behind leakages. Mainly during this study the main reasons for pipeline failure whether it was external corrosion or internal erosion was confirmed through severe analysis of data. In this analysis, failure samples were collected carefully and sent to IEOT, Panvel where after analysis it was found that the pipe lines were being severely damaged internally due to sand erosion. This initiative was very fruitful and helped a lot in redesigning their production methodology to exploit gas in this area in their future endeavours.

		It was after this analysis that they made several corrections in their production methodology like going for gravel/sand pack completions or installing sand traps near wells, etc., to prevent sand production from the reservoir. Moreover after re-engineering their production methodology in order to mitigate sand production, their engineers have divided all the producing wells in to 2 categories as mentioned below: 1. High productive wells: These are the wells with FTHP around 1100 psi and above with gas production rate more than 25000 SCMD. All High productive wells are being completely installed with GP kits to ensure complete control over the sand production from the reservoir to the surface through well tubing. The gravel packs are provided in the wells having abnormally high sand production. Based on the sand production quantity, the gravel pack was provided in 9 out of 20 wells of Keavdespalam. 2. Low producing wells: these are the wells with FTHP's fairly ranging below 900 psi and have a gas production rate of less than 20000 SCMD. Basic data analysis done across many reservoir around the world indicate that, these type of well have very less chances of producing sand. Surface Sand traps are installed to control sand production from these wells. Hence based on scientific analysis, the gravel pack jobs are executed as it also involves deployment of work over rig to installation of gravel pack in well bore. Hence complied.
3.	M/s ONGC and M/s GAIL in KG basin are more focused on production and extraction of oil & gas which is essentially required for the development but the environmental aspects and pollution mitigation measures within their premises are not much focused. The effluent treatment plants are not properly operated, hazardous wastes such as ETP sludge, slop oil is not disposed as per Hazardous Waste and Management Rules, high fugitive benzene emissions, not complying with APPCB CFO conditions and CRZ violation w.r.t Kesanapalli marine disposal. On verification of records the committee observed that any leakages or accident outside the unit premises in farmers land is immediately attended	ONGC is concerned with the environmental aspects and pollution mitigation measures. The Effluent treatment plants are operated at optimum level and corrective measure such as timely revamping/ repairs are taken up so as to maintain the quality of treated effluent water before its disposal in the wells at a depth of more than 1000 meters. 5 no's of ETP's at various location are spread across East Godavari, West Godavari & Krishna District. All the 5 ETPS are capable of handling the effluent produced from the oil & gas producer wells, bringing the parameters upto permissible limits prior to dispatch to effluent disposal wells. Out of 5 ETPs, the outlet line of 4 ETP's are connected directly to effluent disposal wells, whereas only 1 ETP i.e. Kesinapally ETP is having the provision to release of effluent into Bay of Bengal, which is monitored on round the clock basis. Prior to dispatch, the quality parameters of ETP are maintained as per the Pollution Control Board Standards. As per paras 4.a. ii and 4.b.ii of the Committee's report, the results of Water and wastewater analysis at Tatiapaka & Kesanapalli-w GGS were

	and addressed within 24 hours (all minor pinhole leakages are closed with 24hrs) and the unit has taken measures to restore the area as so to prevent any public outcry.	analysed by the Committee. The committee collected treated effluent and effluent from guard ponds to ascertain whether unit is treating the effluent or not. The committee has reported that from table 5b, based on effluent results it was concluded that the unit is meeting the standards w.r.t deep well injection. Similarly, at Table 6b: Analysis results of effluent samples collected in Kesanapalli shows that the units are complying with deep injection well standard. Further the committee stated in its report that in the borewell samples collected, the level of benzene, TPH, O&G and phenols are below detection limit. Since the key indicator parameters are not present in the borewell water samples, the committee opines that ground water surrounding Tatipaka GCS and refinery is not contaminated. As per para 4.a. iv of the committee report, it was concluded that the unit is complying with stack monitoring results. A per para 4.a. v of the committee report, it was observed that the unit is complying with ambient air quality standards w.r.t noise. Committee has given a positive note on the leakages that any leakages or accident outside the unit premises in farmers land are immediately attended and addressed within 24 hours. Hence complied.
4.	It is observed that while knocking out moisture in gas dehydration system using tertiary ethylene glycol, glycol vapors are escaping with moisture and to ensure that moisture from gas dehydration- TEG unit is collected separately treated so as to remove the glycol vapours and then moisture is let into atmosphere. In no case the unit shall knock out the untreated moisture containing glycol vapours into the atmosphere.	The gas dehydration units in production installations are basically very small units (i.e. 1-2 Lakh Standard Cubic Metre/day) as against the conventional units of 20-30 LSCM/day. As per established engineering practices, based on size, only conventional units have the provision of reflux condenser. Hence small units do not have a provision of reflux condenser. The TEG process is used worldwide for natural gas dehydration process. Boiling point of TEG is 240 deg C. It cannot form vapors at 200 deg C. During, the TEG regeneration cycle, only moisture can escape from the Reboiler vent at 200 deg C from Rich TEG. Natural gas obtained from the wells contain water vapor which need to be removed to prevent corrosion of equipment and pipelines. Under the TEG (Tri Ethylene Glycol) process, to remove water vapor from natural gas, a chemical (in liquid form) called, TEG(Tri Ethylene Glycol) is fed into the natural gas chambers. The TEG liquid absorbs water vapors from the natural gas and becomes wet TEG. Thereafter, the wet TEG (TEG absorbed with water vapor) is sent to a re-boiler system. Upon heating the re-boiler system at 200 deg Celcius, the water vapor gets separated from the TEG and is let out. This phenomenon is referred to as Knocking out. It is to be noted that the boiling

		point of TEG is 240 deg Celcius, i.e only at 240 deg Celcius, TEG can transform from liquid state to gaseous state and at 200 deg Celcius, therefore the TEG remains as liquid and cannot escape as a vapor during Knocking out process. Hence the unit is not knocking out untreated moisture with glycol into the atmosphere. Hence complied.
5.	The unit has dumped the ETP sludge within its premises, oil spill inside the premises is not cleaned up, and effluent is getting mixed with storm water, ambient benzene in the unit premises is very high, Leak Detection and Repair (LDAR) is not carried out. But however, the committee observed that the unit has not dumped any waste outside its premises.	The ETP sludge is stored in the designated and isolated sludge drying bed inside the installation. In conformance to the Joint Committee's suggestions, TERI (The Energy and Resources India) is in communication with the Respondent for a project on bio- remediation of the oily sludge and oil contaminated soil obtained from the refineries. The project proposal dated 17.02.2021 from TERI to ONGC for the Bio- Remediation process of sludge is attached as **Annexure- 18.** Periodic cleaning of drains is taken up to improve the house keeping. A recent Quality Analysis Test Report of Storm water drains at Tatipaka, GGS conducted by Hubert Enviro Care Systems Pvt Ltd for the period from January to June, 2021 is filed as **Annexure- 24.** The leaves and garden waste in the storm water drain in Kesanapalli GCS is cleaned and its photograph is filed as **Annexure- 29**. Indent was given to civil section of the Kesanapalli GCS to construct Oil catchers at New ETP area, Old ETP area, Tank Farm area and entrance gate. By this the effluent will not be mixed with storm water. The Respondent complied with the Joint Committee's observation and Benzene levels are BLQ (Below Level of Quantification) during the second visit at February, 2021. The Committee has also observed that the unit has not dumped any waste outside its premises. Hence complied with the Committee's observations.
6.	Around five acres of land in Kesanapalli GGS is probably contaminated with mercury. The committee submits to Hon'ble NGT to direct unit to clean & restore the probably contaminated area under supervision of APPCB as per procedure laid in the "Guidance document on Assessment and remediation of contaminated sites" .	After cleaning the area opposite to the ETP area; total water logging is removed and earth cleaning was done, Growth of trees visible in the area and the photograph of the same is filed as **Annexure-52.** The Respondent further states that the Environmental Monitoring Report of Kesanapalli Complex dated 21.11.2020 submitted by Hubert Enviro Care Systems Pvt Ltd. Shows that the mercury level is BLQ (Below the Limit of Quantitation). The Environmental Monitoring Report is filed as **Annexure-53.** Hence, ONGC has complied with the Committee's observations.
7.	Kesanapalli GGS shall immediately stop disposal of	The ONGC has the necessary CFO and ETP capacities to treat its effluents and it is pertinent

	treated effluent by marine outfall near the coast and dispose the treated effluent as per the conditions stipulated in CFO issued by APPCB.	to note that that the Auto-Renewed CFOs does not mention the exact quantity details which has created an impression that ONGC does not have the necessary CFOs. The marine disposal of treated effluents at Kesanapalli takes place with proper consent orders obtained from the APPCB. Also, the photograph filed as **Annexure- 70** shows the modifications done to the ETP for Marine disposal. As observed by the committee, the Marine disposal GRE pipeline at Kesanapalli-w got washed away due to rough sea conditions/ high tide occurring frequently at Bay of Bengal. As a short-term measure, 8" Casing pipe about 50~60 m was hooked up with flexible joint at GRE dislocation point for the safe disposal of the produced water after the treatment as per pollution control board norms. However, this is a temporary arrangement made till permanent line is laid. Tendering process has been completed and Notice of Award placed on 21.06.2021 **(Annexure- 71)** for installing new 1.5 km length of pipeline from shore to subsea and the works shall be completed within by Feb'2022, based on fair weather window in Bay of Bengal Sea. Meanwhile, created temporary provision for facilitating disposal of New ETP treated effluent to old ETP deep wells injection for minimizing the marine disposal system. The quantity of treated effluent quantity by marine disposal near the coast has been substantially reduced by treating the effluent in the effluent disposal wells at a depth of more than 1000 meters.
8.	During monsoon due to heavy rains and water logging, effluent is mixed with storm water due to which around three acres of land in Tatipaka near to old ETP and 10 acres of land in odalarevu in between GAIL and ONGC terminals is having high COD, bod and TOC. The unit shall ensure that effluent will not allowed to mix with storm water.	Suitable action is being taken to clean the storm water drainage system inside the Tatipaka installation and to see that oil is trapped in oil catchers provided in the storm water system. Water logging in the low-lying area within the installation observed during the Committee visit was due to unprecedented rains before the Committee visit. The entire area near the entrance gate was cleaned; the said area was levelled and grass is being grown in the area. Photographs showing clean entrance area- **Annexure 49.** Photograph showing the cleaned area opposite to new ETP boundary wall is filed as **Annexure-51**. Separate CRWS (Contaminated Rain water system) system is in place to treat rain water from process area. A photograph of the CRWS at Odalarevu plant is filed as **Annexure- 63**. MEG barrels were placed near the referred lagoon having an area of 1.25 acres (not 10 Acres) during construction activities. Unintended and inadvertent leakage of one of the barrel of MEG in the area might have resulted into low pH value in the sample. The same has been rectified and care will be taken to ensure such instances do not

		occur in the future. The photograph showing removal of MEG barrels and no water logging in the area is filed as **Annexure- 64**. Thus the Respondent has complied with the observations made by the Committee.
9.	The Committee carried out Ambient air quality monitoring in two installations namely Tatipaka and Odalarevu installations during December, 2020 for all notified parameters namely Sulphur Dioxide as SO2, Nitrogen Dioxide as NO2, particulate matter (PM10), particulate matter (PM2.5), ozone, lead, carbon monoxide, ammonia, benzene, Benzo(a) pyrene, arsenic, nickel and noise. Both installations are complying with ambient air quality standards w.r.t all parameters except Benzene. The ambient benzene concentration in the Tatipaka unit premises is ranging between 92 µg/ m3 to 2051 µg/ m3 and in odalarevu installation 68.8 µg/ m3 and 122 µg/ m3 against the ambient standard of 05 µg/ m3. One of the reason for high ambient benzene concentration within the unit premises may due to placing the monitoring station close to fugitive source. The unit submitted to the committee that it has undertaken corrective actions like arresting fugitive emissions etc. The committee again carried out ambient benzene monitoring both inside and outside the unit premises in the villages both upwind and cross-wind directions. The ambient benzene concentration in the villages in Tatipaka is ranging from 0.02 µg/ m3 to 0.48 µg/ m3 and within unit premises it is reduced to 0.1 µg/ m3. Both Tatipaka and odalarevu facilities shall install continuous ambient monitoring facility and VOC sensors within the unit premises and results shall be displayed at the entrance of	The VOC monitoring in installations by portable VOC meters has been started and efforts are being made to install continuous ambient monitoring facility as recommended by the committee. Sample VOC Monitoring reports obtained from Tatipak Complex and Kesanapalli Complex is filed as **Annexure- 72**. Hence complied.

	the unit for public and also the results shall be connected to APPCB server.	
10.	The committee observed during both the visits that the treatment plants are not properly operated and storm water drains are filled with sludge. Records on hazardous waste disposal was not shown to the committee. The ETP sludge and oily sludge from slop oil tank is stored in open. The unit has not taken any measures for the cleanup of sludge and storm water drains under the supervision of APPCB. The units shall ensure that the hazardous waste generated shall be disposed as per the conditions stipulated in CFO and in compliance with Hazardous Waste Management Rules, 2016.	The oily sludge is stored in the sludge drying bed inside the installations and shall be treated suitably through bio remediation process. The sludge generated in Kesanapalli GGS is in very less quantity and is stored in sludge pit and the quantity estimated is around 50mt and the quantity of sludge stored in Tatipaka sludge pit is around 100mt.The sludge is planned to be disposed from both ETPs by the approved vendors of the APPPCB for the safe disposal and action is in progress. A proposal was submitted by TERI for Bioremediation of oil -contaminated soil at Rajahmundry Assets on 17.02.2021. **(Annexure-73)**. The storm water drains are being cleaned frequently to ensure good house-keeping and photograph proofs of the same is filed. The units are ensuring that the hazardous waste generated are disposed as per the conditions stipulated in CFO and in compliance with Hazardous Waste Management Rules, 2016. Hence complied.
11.	The units shall pay Environmental compensation to CPCB as follows: Tatipaka GGS Rs. 7,28,62,500/- Kesanapalli GGS Rs.4,11,00,000/- Odalarevu GGS Rs. 5,68,50,000/-	**Tatipaka GGS:** TEG dehydration system is not a major source for Benzene in the Tatipaka complex; the present ETP at Tatipaka complex is adequate enough to treat the actual effluents generated and that the unit is maintaining proper procedure and standards in disposing off the hazardous waste. Hence this Hon'ble Tribunal may be pleased to dismiss the Environment Compensation calculated by the Committee for Tatipaka GCS. **Kesanapalli GGS:** The Kesanapalli plant has got the CFE & CRZ Clearance, however, the some part of the marine disposal pipeline got broken and washed away due to high tides, which are being replaced and the works are expected to be completed by Feb'2022. However, temporary arrangements have been made by laying 8" Pipeline around 60 meter in liue of the broken pipeline. Considering the above, the Tribunal may dismiss the Environmental Compensation calculated by the Committee **Odalarevu GGS:** ONGC Odalarevu Onshore Terminal has always been operating in line with the norms and conditions laid down by CPCB/APPCB in its efforts for environmental protection. Also, the ETP at the plant is very much in operation. ONGC Odalarevu Onshore Terminal is neither contributing towards the pollution of environment nor contributing to any kind of undesired emissions. Therefore, the Hon'ble

		tribunal may dismiss the Environmental Compensation calculated by the Committee.
12.	During visit the committee observed that the storm water drains are clogged, filled with effluent, oily sludge is deposited in the drains in ETP area. Firstly the units shall ensure that the entire storm water from the unit shall be collected and reused with in the unit premises and it shall not sent outside the unit premises. The committee submits to Hon'ble NGT to direct APPCB to impose this as one of the consent conditions as not to discharge any storm water outside the unit premises. The unit shall have a fixed frequency for cleaning the drains and oily sludge settled in the drains shall be sent to TSDF or as directed by APPCB.	The storm water drains are being cleaned periodically as part of housekeeping. Any oily sludge in the drain shall be collected in the sludge drying bed for future bio remediation or as proposed by APPCB. As a statutory compliance, the ONGC has been submitting the details on disposal of hazardous wastes to the APPCB in the manner of Annual filing of returns. **(Annexures- 75 to 77)**. Hence complied.
13.	The unit has obtained consent from APPCB during 2015 and subsequently the consent is renewed (online consent monitoring and management system) but however post 2015 due to ageing of wells the quantity of produce water is increasing and there by the quantity of effluent generated is also increased. The actual quantity of effluent generated is higher than the quantities stipulated in the CFO. The unit shall either apply for amendment of consent issued by APPCB for the actual quantity of effluent generated or shall restrict their effluent generated to the quantities specified in CFO. <u>Presently all units are having valid CFO issued by APPCB.</u>	The quantities of Oil, gas and produced water from the wells keeps on changing based on the reservoir behaviour. It has been seen that in the oil & gas well, the quantity of produced water increases with time. As observed by the Joint Committee, all units have the necessary CFO for its operation and have paid the necessary fee for any additional capacity. It is pertinent to note that the single window, online Auto-renewal of CFOs by the APPCB did not mention the additional capacity of ETPs. The request for amendment to the CFOs has been submitted to APPCB, Kakinada in terms of the recommendations of the Committee. Hence complied.
14.	There are four ETP's to treat effluent generated from 12 installations. Capacity of Tatipaka ETP is 500 KL against the quantity of effluent received 330 KLD, Capacity of Kesanapalli ETP-2 is 1500 KLD against quantity	**<u>Tatipaka ETP</u>** As reported by the Joint Committee, the capacity of Tatipaka ETP is 500 KL against the quantity of effluent received 330 KLD. **<u>Kesanapalli ETP</u>** In Kesanapalli-w, 02 no of ETP are in operation, first one is ED well disposal ETP(old ETP) with

	of effluent received 2158 KLD and Capacity of Gopavaram ETP is 600 KLD against quantity of effluent received 1130 KLD which implies that the Kesanapalli and Gopavaram ETP's are inadequate to treat the actual effluent generated. The units shall augment their treatment capacity so as to treat the actual effluent generation or restrict their production so as to minimize the generation of produced water to the tune of their ETP capacity.	capacity of 750m3 and second one is Marine disposal ETP(New ETP) and combined capcity of ETP is 2250m3/day. Both ETP are in operation by treating effluent as per standards of CPCB guidelines and committee produced the results of both ETP meeting the required standards for the disposal. The average effluent generated from Kesanapalli GGS as mentioned in the report, is 2158m3 which is less than the total capacity of 2250 m3/day. Hence, the observations made by the committee are not correct. The performance of the ETPs is being monitored very closely and adequate measure are taken from time to time for augmentation of capacities as well as achievement of discharge parameters of treated produced water before its disposal in effluent disposal wells at a depth of more than 1000 meters. Suitable revamping/ repairs are undertaken to maintain the equipment in good conditions. **Gopavaram ETP** Gopavaram was having one additional injection facility known as GMAE disposal facility (600m3/day capacity) along with Gopavaram ETP capacity of 600m3/day and total Capacity of disposal system is 1200m3/day. The effluent generated from Gopavaram is 1130m3/day, which is less than the combined capacity of Gopavaram effluent disposal system, i.e, 1200m3/day. The capacities of the effluent treatment facilities are also being augmented to process increased water production from wells. The Respondent states that the project for additional injection facility known as GMAE disposal facility (600m3/day capacity) was intimated to the APPCB and the Renewal for Consent for Operation of Gopavaram GGS dated 28.02.2015 **(Annexure- 33)** highlighted the proposed commissioning and consent for the ETP at additional injection facility known as GMAE disposal facility (600m3/day capacity). Thereafter, on 13.08.2015, the Consent order for Establishment of additional injection facility was issued by the APPCB and the same is filed as **Annexure- 34**. Upon receipt of the Consent for Establishment of Marine disposal, ONGC started its establishment work in 2015 and completed the same in 2017. Thereafter, the implementation status of the additional faciity at Gopavaram was provided to the Environment Engineer, AP Pollution Control Board, RO Kakinada vide letter no. ONG/RA/HSE/CFO/2017-18/1029 dated 07.06.2017 **(Annexure- 35)** Based on the communication from APPCB for payment of additional fee, ONGC sent an email to APPCB dated 05.10.2018 **(Annexure-78)** submitting the excess CFE fee through DD for increased investments at Gopavaram GGS. Thus Gopavaram GGS has the necessary CFO with respect to its ETP facilities.

		Hence, the Tatipaka ETP, Kesanapalli ETP and Gopavaram ETP have adequate capacities to treat the actual effluent generated. Hence complied.
15.	Based on raw effluent and treated effluent results, ambient air quality results, stack monitoring it is concluded that Tatipaka GCS, Kesanapalli GCS and Odalarevu GCS is complying with the standards w.r.t deep well injection, ambient air quality w.r.t noise and all other parameters except benzene. Post implementation of corrective measures the unit is found complying with ambient benzene standards also. Samples collected from the borewell samples around the installation do not contain benzene, TPH, O&G and phenols. Since the key indicator parameters in the borewell water samples, based on the current analysis report the committee opines that ground water surrounding Tatipaka GCS & refinery, Kesanapalli GCS and odalarevu GCS is not contaminated. Sediment samples were collected from Nagaram & Kesanadasipalem area where major accidents are reported to have taken place. The analysis results were compared with soil screening values for agricultural purposes as per "Guidance document for assessment and remediation of contaminated sites" and it is found that the sites are not contaminated. During accident site visit the committee observed that plantation has come up in the area.	Committee while appreciating the measures taken by ONGC, it has concluded that there is no environmental damage with regard to air, water, sound and soil pollution in and around the units of the ONGC and also held that there are proper control mechanism in place to prevent pollution, ground water quality and preservation of water bodies etc. It is to be noted that the committee had also visited several villages and residential areas and had taken samples and had held that there is no pollution caused due to activates of ONGC and also appreciated CSR activities under taken by ONGC in and around the operational areas of ONGC.

Hence it is clear that the observations of the Committee referred to above show that concerns have been addressed and the recommendations of the Committee have also been complied with. It is submitted that ONGC is operating in the said region for more than three decades and the public are well aware of the operations of the ONGC crew working round the clock throughout the year. The Respondent is following best practices to ensure safety while sub-serving public interest, particularly in ensuring that a precious resource like natural gas benefits the national economy and the people

at large. The Respondent ONGC is also adopting and properly implementing the standards set forth by the APPCB.

It is therefore prayed before this Hon'ble Tribunal to close the Original Application by accepting the reply of Respondent ONGC and thus render justice.

Counsel for the Respondent

Respondent

P.J. PRASADA RAO, GM (P)
I/M. KCP (W)-GGS & PNMD-GCS
Area-I, Surface Team
ONGC, RJY ASSET
RAJAHMUNDRY-533 106.

VERIFICATION

I Pidikiti Jawahara Prasad Rao, s/o Sri. Venkata Seshaiah aged about, 56 working as General Manager (Production) residing at Rajahmundry, East Godavari District, Andhra Pradesh do hereby declare and verify that what are stated in the above Compliance report are all true to the best of my knowledge and belief.

Dated at Rajahmundry, this the this 4th day of January, 2022.

Counsel for the Respondent

Respondent

P.J. PRASADA RAO, GM (P)
I/M. KCP (W)-GGS & PNMD-GCS
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