

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Original Application No. 73 of 2021 (SZ)

IN THE MATTER OF:

Visakha Pawan Praja Karmika
Sangham, Andhra Pradesh

...Applicant

:Vs:

Union of India
Rep. by its Secretary,
Ministry of Environment, Forest & CC
Indira Paryavaran Bhavan,
Jorbagh, NewDelhi-110 003 and Others

... Respondents

**OBJECTIONS TO THE REPORT OF JOINT COMMITTEE DATED 17.06.2021
FILED ON 16.09.2021 on BEHALF OF HINDUSTAN PETROLEUM
CORPORATION LIMITED - 7th RESPONDENT**

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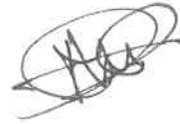
...Respondents

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DATED 17.06.2021 FILED ON 16.09.2021 on BEHALF OF HINDUSTAN
PETROLEUM CORPORATION LIMITED - 7th RESPONDENT ALONG
WITH ANNEXURES**

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Dated at Chennai on this 24th day of February 2022



ADVOCATES FOR 7TH RESPONDENT

**BEFORE THE NATIONAL GREEN TRIBUNAL
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...Applicant

:Vs:

1. Union of India
Rep. by its Secretary,
Ministry of Environment, Forest & CC
Indira Paryavaran Bhavan,
Jorbagh, NewDelhi-110 003
2. Union of India
Rep. by its Secretary
Ministry of Petroleum & Natural Gas,
Sastry Bhavan, New Delhi-1
3. Central Pollution Control Board
Rep. by its Chairman
Parivesh Bhavan,
East Arjun Vihar, New Delhi-110 032
4. State of Andhra Pradesh
Rep. by its Chief Secretary,
Government Complex,
Velagapudi, Guntur District
Andhra Pradesh-522 503
5. Andhra Pradesh Pollution Control Board
Rep. by its Member Secretary,
D.No.33-26-14/D2
Near Sunrise Hospital, Pushpa Hotel Center
Chalamvari Street, Kasturibaipet
Vijayawada, Andhra Pradesh-520 010
6. District Collector and Magistrate
Main Road, Krishna Nagar,
Maharani Peta, Vishakhapatnam
Andhra Pradesh-530 002.
7. M/s.Hindustan Petroleum Corporation Limited
Rep. by its Chairman & Managing Director
Malkapuram Post, Visakhapatnam
Andhra Pradesh-530 011

...Respondent


जी. भगवान
G. BHAGAVAN
उप महाप्रबंधक - तकनीकी
Dy. General Manager-Technical
एच.पी.सी.एल. - विशाख रिफाइनरी
H.P.C.L - Visakh Refinery

**OBJECTIONS TO THE REPORT OF JOINT COMMITTEE DATED
17.06.2021 FILED ON 16.09.2021 on BEHALF OF HINDUSTAN
PETROLEUM CORPORATION LIMITED - 7th RESPONDENT**

I, Gudala Bhagavan, S/o Gudala Appanna, aged about 52 years, Deputy General Manager - Technical in Visakh Refinery, Hindustan Petroleum Corporation Limited, Malkapuram Post, Visakhapatnam, Andhra Pradesh-530 011, do hereby solemnly affirm and sincerely state as follows:

1. I am Deputy General Manager - Technical in Visakh Refinery, Hindustan Petroleum Corporation Limited and as such I am well acquainted with the facts and circumstances of the case. It is submitted that HPCL-VR have already filed a reply statement dated 12.04.2021 to the main application, Objections to Joint committee on fire incident and reply-to-Reply Affidavit filed by Applicant dated 25.07.2021 which are prayed to be read as a part and parcel of this affidavit.
2. This Respondent, Hindustan Petroleum Corporation Limited (HPCL-VR), is a Government Company and a Central Public Sector Enterprise, which is ultimately owned and controlled by the Government of India. This Respondent, as a responsible Public Sector Undertaking having highest regard for the law of land, not only complies with all the environmental laws, but is also socially responsible and undertakes a lot of activities towards the betterment of the society at large.
3. It is submitted that the Respondent's Visakhapatnam Refinery is having a name plate capacity of 8.33 million Metric Tonnes per annum (MMTPA) and having a valid Consent for Operation (CFO) for 10 MMTPA. The refinery operating capacity is in the range of 9 to 10 MMTPA. Moreover, this Respondent's Visakhapatnam Refinery has all the necessary environmental consents to operate its Refinery and

complies with the conditions imposed upon it by the environmental authorities.

Preliminary Objection

4. The scope/jurisdiction of the Joint Committee defined under the order of NGT dated February 25, 2021, provided in para 11 as *"...to ascertain the **genuineness of the allegations made in the application** and its impact and the remedial measures if any to be taken.... to inspect the **unit in question** and submit a factual as well as action taken report, if there is any violation found."*, and in this respect the Joint Committee has been directed to ascertain *"whether there is any violations of environmental clearance and consent conditions, whether the safety measures that are provided are sufficient to meet the pollution that is likely to be caused on account of the operating of their unit, whether the recommendations made by the Indian Institute of Science in 2016 which was directed to be implemented as directed by the Andhra Pradesh State Pollution Control Board (APPCB) during 2016, have been complied with."* (para 12). Further, the Joint Committee is directed by the aforesaid Order that *"If there is any violation found **causing environmental degradation** they are directed to assess the environmental compensation and also to provide the remedial measures for the purpose of mitigating the situation and improve the condition of air quality in that area"*.

5. The scope of the Joint Committee is limited to the allegations of the Applicant that this Respondent (HPCL) and APPCB have failed to implement the recommendations given by the IISc Study in 2016. However, it is submitted that the Joint Committee has gone beyond its scope and looked into aspects prior to the IISc Report recommendations, which is not related to the allegations of the Applicant. Furthermore, it is clear from the Report of the Joint Committee that there is no environmental degradation or pollution caused by/attribution to this Respondent, and hence, the question

of assessing any compensation by the Joint Committee does not arise at all.

6. It is submitted that the original complaint by the Applicant relates to alleged odour caused by this Respondent's refinery. However, it is clear from a bare perusal of the Report of the Joint Committee that there is not a single finding/observation/recommendation, which states that the Respondent's refinery is responsible for alleged odour nuisance in nearby residential area. Further, the Joint Committee had mentioned in their point wise compliance status of Task Force Directives that No perceptible odour was observed during inspection of refinery. Hence, there cannot be any question of fixing liability on this Respondent.
7. It is submitted that at each instance of application for additional/new environmental clearance for an industry, the procedure adopted is that the industry provides a declaration that all previous conditions under existing environmental clearances (if any) are complied with and thereafter the MoEF inspects the industry (i.e. this Respondent) and satisfies itself of the compliance declaration. Thus, MoEF has issued the latest EC dated 11.02.2016 after this respondent complied with the conditions of all the earlier ECs.

Notwithstanding the fact that the Joint Committee has exceeded its scope and without anyway acceding to the additional scope of the Joint Committee, the Respondents submits its **reply to Contents of the Joint Committee Report dated 17.06.2021** as under:

8. Without prejudice to the above preliminary objections, this Respondent is responding to the contents of the Joint Committee Report and the annexures therein in the following manner:
9. With regard to paragraphs 1.0 to 3.3 are factual position related to constitution of committee, ToR, site inspection and about Respondent's Refinery and its operation at Visakh.

10. With regard to para 3.3.1, it is submitted that the quantity mentioned as "Refinery Fuel" of 727300 MT under products produced during 2020 includes Refinery internal fuel and loss. Thus, the quantity of products mentioned in the Table-1 of the Joint Committee (JC) report includes loss also.

Generally, refinery material balance is done as follows:

Crude intake (Raw material) = Finished products +/- intermediate stock + Fuel & Loss

As per the above equation, the raw material quantity will always match with summation of products, variation in intermediate stock (stream build up/ depletion) and Fuel & Loss. Hence, the data includes the loss which has also been factored in. Thus, it is not correct to say that the entire crude oil is converted into useful petroleum products without any loss.

11. With regard to para 4, it is submitted that the latest compliance status of conditions in all the ECs is provided in **Attachment-I (colly.)**.
12. With regard to para 4.1, it is submitted that latest compliance status of CFO conditions is provided as **Attachment-II**.
13. With regard to para 4.2, it is submitted that Compliance status to IISC-Bangalore study recommendations was submitted earlier in HPCL-VR's reply dated 12.04.2021. This Respondent craves leave to refer and rely upon the same for the sake of brevity. It is reiterated that there is no pending compliance required to be done by this Respondent with respect to the aforesaid study recommendations. It is humbly submitted that the said recommendations are directory in nature and do not highlight any violation of existing norms.


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 G. BHAGAVAN
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14. With regard to para 4.3, it is submitted that Latest compliance status of task force directives issued by APPCB is enclosed as **Attachment-III**.
15. With regard to para 5, it is submitted that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Visakhapatnam city and therefore, HPCL refinery is not responsible for the same. The Respondent submits that Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam. It is observed that it is in line with the PM levels recorded outside the periphery of the refinery that is to say that when the PM levels in the city of Visakhapatnam increases, the readings within the refinery also proportionately increases. This can be seen from a simple comparison between the data collected at CAAQM stations within the refinery premises and the PCB CAAQM station located within the city of Visakhapatnam (located about 9 km from the refinery). Further, the stack monitoring data, which is shared with APPCB and also forms part of the Joint Committee Report, clearly shows that the emission of PM by the Respondent is always within the limits prescribed. Hence, there is no violation of the prescribed PM levels and the Respondent cannot be held liable for any consequential action. Besides this Hon'ble Tribunal may take into account that the Respondent is surrounded by various other industries. Copy of comparison statement of CAAQM readings within the refinery and of PCB CAAQM station from December 2020 to June 2021 is enclosed and marked as **Attachment - XIII**.
16. It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station at North West corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. The 24hr

Average SO₂ value recorded in the store yard CAAM station near the same location was within the prescribed limit. The distance between the two CAAM stations is about 100 meters. Hence, it is clear that the higher reading is a localized event and upon dispersion into the atmosphere, there is no excess reading.

17. As mentioned in the JC report, the values of SO₂ & NO_x are within the maximum prescribed limit of 80 µg/m³. It is submitted that SO₂ and NO_x will be present in the flue gases emitted from the stacks and not due to any leaks in the process systems and these values are well within the standard limits. As informed earlier under point 15, it is submitted that PM₁₀ & PM_{2.5} values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Visakhapatnam city and therefore, HPCL refinery is not responsible for the same. Daily 24hr average value of SO₂ recorded at south gate CAAQM station for the period February 15 to March 15, 2021 was within the prescribed limit as can be seen in the table in Annexure-17 of the report.
18. As mentioned in the JC report and the values recorded in the APPCB mobile CAAQM station all the parameters were well within the prescribed standard. This indicates the emissions from the refinery have not resulted in exceedances of ambient air quality parameters in the nearby residential area.
19. With regard to para 5.1, it is submitted that as observed by the Joint Committee basis sample analysis and online stack monitoring data for the period January 2020 to March 2021, the parameters PM, SO₂ and NO₂ are meeting the prescribed standards of load-based emissions.
20. With regard to para 5.2, it is submitted that HPCL-VR receives fresh water from 3 sources of reservoirs. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic

water. It may please be noted that the total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD. Hence, as long as the total consumption of the fresh water is within the maximum permitted limits, there is no exceedance of the use of the water.

21. With regard to para 5.2 (a) and (b), it is submitted that Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as **Attachment-IV**. As regards wastewater generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.
22. With regard to para 6, it is submitted that as opined by the committee, high dissolved solid content in ground water may be due to intrusion/seepage of seawater. The borewell water is not used for drinking or any other purpose other than for quality monitoring, hence the drinking water standard limits will not be applicable to it.
23. With regard to para 7, it is submitted that as observed by the committee basis Sulphur balance for the period January 2020 to December 2020, the refinery's daily SO₂ emissions are below the prescribed limit. The Committee has rightfully concluded that the refinery is not exceeding the Sulphur dioxide emission load of 11.5 tons per day stipulated in the APPCB CFO Order.
24. With regard to para 8, it is submitted that HPCL-VR is complying with all the conditions mentioned in various ECs, CFO and Taskforce directives. The detailed compliance status of these conditions is provided in **Attachment-I (colly.)** (EC conditions), **Attachment-II** (CFO) and **Attachment-III** (Taskforce directives) hereinafter.

25. The Report itself observes that activities of refinery are within the prescribed parameters. The Joint Committee is empowered to recommend compensation only if any violation causing environmental degradation is found, and this is not the case herein. Hence, there cannot be any question of assessing environmental compensation. Therefore, it is humbly submitted that the Hon'ble NGT should not consider levying any environmental compensation. Without prejudice to what is stated in the para, the Respondent questions the methodology adopted by the Committee in arriving at the compensation and do not agree with the same.
26. With regard to para 9, it is submitted that below tabulation are reply to observations of the Joint Committee.

S.No	Observations of the Committee	HPCL Reply
9	i. Committee inspected HPCL known as Visakha Refinery during March 25-27, 2021. During inspection, the unit was operational, however, FCCU-I, SRU train 1&2, Mcrox unit were not in operation. It was informed that FCCU-I is currently shutdown due to low catalyst circulation rate, and the unit is having four SRU Trains and total design feed rate of these SRUs is higher than the generated feed gas. Generally, two SRU trains will be in operation. Thus SRU Train-3 and DHT SRU were in operation.	Statement of facts.
	ii. The unit has three ETPs for treating the different streams of effluents generated. ETP-I is of the capacity 3,240 KLD, ETP-	The quantity of effluent treated in ETP-II was 3120 KLD which is lower than the design flow rate of 7800 KLD. The total quantity of treated water from ETP-II and

S.No	Observations of the Committee	HPCL Reply
	<p>II (7,800 KLD) and ETP-IV of 4320 KLD capacity. During inspection, ETP I & ETP-IV were fully operational, but, ETP-II was partially operational and was diverted to ETP-IV for further operation. It may be noted that the design capacity of ETP-IV is smaller compared to ETP-II, hence, complete treatment cannot be achieved. This is also reflected in the analysis results of ETP-IV outlet (Table 13). The chance of bypass is highly possible, however, during inspection no by-pass of effluents was observed.</p>	<p>direct influent to ETP-IV was 3840 KLD which is below the design maximum flow rate of ETP-IV (4320 KLD). Further, total treated effluent quantity discharged from refinery (from ETP-I & ETP-IV outlets) is below the stipulated limit of 11820 KLD.</p> <p>As mentioned earlier, analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards.</p> <p>Further, from Table 14 of the JC report, it is evident that the pollution loads of MINAS parameters are much below the CFO stipulated limits.</p> <p>As observed by the committee, the bypass facility at ETP-II is kept closed. However, to ensure the same, lock arrangement is provided on the valve.</p>
	<p>iii. In the ETP-II area, the TPI was broken down and the thick black slurry like effluent was spilled all over and was filled in the drains. The drains near ETP-II section was filled with water and white sand like material</p>	<p>Housekeeping of the location and cleaning of drains near ETP-II was carried out immediately. The Photo of TPI area is enclosed as Attachment-V.</p>
	<p>iv. The storm water drains near the final outlets I & II was filled with water and when enquired, it was told that rainwater. The small tank is constructed near the guard pond and it was observed that about four</p>	<p>The tank mentioned is oil catcher provided for storm water. This oil catcher is provided to retain oil traces, if any in the storm water. The same is being bailed out using gully suckers and transported to receiving sump of ETP-II for further treatment.</p>

S.No	Observations of the Committee	HPCL Reply
	inches oily mark was visible. The water filled in this tank is transported to the rain water harvesting tanks through tankers.	
v.	The unit has not provided closed collection system to handle the odorous effluent streams. The oil-water separators and equalizations tanks are not covered to trap the VOCs. Hence, during inspection a strong odour of VOCs was sensed by the committee members in the ETP I & IV, near bio-remediation ponds and at guard pond.	The odour was localized & intermittent and it was not felt beyond ETPs area. VOC recovery system is being implemented in the IETP (Integrated Effluent Treatment Plant) as part of VRMP (Visakh Refinery Modernization Project) which is under mechanical completion stage. The existing ETPs will be non-operational post commissioning of IETP.
vi.	The guard pond is filled with the treated effluent of ETP-I & II and once through cooling water. It was observed that the oil was floating on the surface of the guard pond near the inlet of ETP treated water.	Slight oil traces observed by the committee were in a small stagnated pool of water at the inlet of guard pond. However, the same are negligible as is evident from the laboratory analysis carried out by Joint committee on the sample collected at this location (O&G value of 2 mg/L vs prescribed limit of 5 mg/L).
vii.	The hazardous waste generated by the refinery as per the authorization is stored in a separate shed under lock & key. The different types of wastes are kept separately with demarked. The wastes are disposed accordingly mentioned in the authorization.	Noted as statement of fact.
viii.	Sludge generated from Crude/Product tanks is shifted to Sludge lagoons and is called as high oily sludge. Processing of this sludge to recover the oil is	Noted as statement of fact.

S.No	Observations of the Committee	HPCL Reply
	<p>carried out through a temporary facility (Decanter, Centrifuge, RO Tank) installed by external agency. When 3000 to 5000 m³ of sludge is accumulated, tender is placed for processing of sludge. The third party by installing temporary facility such as Decanter, Centrifuge & RO Tank. The recovered oil generated is pumped to slop oil tanks for further reprocessing in CDUs. Low oily residual sludge separated out of sludge processing is taken to Bins for Bio Remediation process</p>	
	<p>ix. During inspection, it was noticed spillages in the sludge processing area and scatter of sludge near the sludge lagoon ponds. The sludge lagoon ponds were not covered and the VOC measured by hand held instrument showed 8 - 9 PPM. In this area strong VOC was sensed by the committee members. The industry representative informed that it is only local and is not carried to other area of the refinery</p>	<p>VOC measured at sludge lagoon ponds by hand held instrument showed 8 - 9 PPM. Few meters away from the sludge lagoon ponds, the VOC measurement done by same hand held instrument in presence of Joint committee showed Nil VOC. It was informed to Joint Committee that the VOCs are confined to local area and are not carried to other areas of the refinery.</p> <p>Housekeeping at sludge processing area was carried out which is a regular activity. The Photos of sludge lagoon ponds area are enclosed as Attachment-VI.</p>
	<p>x. In the bio-remediation process of low oily sludge, 10 bins of 100 m³ of each is constructed and filled with low oily sludge. The oil zapper bacteria at 5 kgs/m³ and nutrients of</p>	<p>Bio-remediated low oily sludge (TPH <1%) is being used as either garden soil or landfill.</p>

S.No	Observations of the Committee	HPCL Reply
	250 gm/m ³ is mixed along with the sludge. Periodic tilling has to be carried out. After two months, the sludge has to be tested for the oil content and if required additional oil zapper bacteria and nutrients have to be added. After 10-12 months, the oil sludge will be completely degraded and can be used as manure.	
	xi. However, during inspection it was noticed that the 5 bins were empty and the remaining bins were filled with sludge, but on top of the sludge, high oily sludge along with biofilm was dumped. The sludge was too dried and appears that it was not tilled and aerated for the growth of bacteria for the treatment.	Bio-remediation of low oily sludge in bio-bins 1, 3, 7 & 8 was in progress during JC visit. Tilling of low oily sludge in these bins was carried out in Feb 2021, May 2021, Sept 2021 and Dec 2021. Normally, tilling requirement is observed to be once in 2-3 months based on the condition of sludge under bioremediation. The oily sludge observed by the committee in one of the bins is freshly dumped low oily sludge meant for commencing bioremediation.
	xii. It was informed that the 1 st batch was processed in bin no. 2, 5 & 6 and completed in March 2020. The treated sludge was utilized for garden soil and road repair works in project site.	Noted.
	xiii. It has been observed that project had display board at the main entrance gate. However, the critical parameters viz., stack emission, ambient air quality monitoring, water, noise,	The old display board was not functioning properly, which was to be replaced with a new LED display board. However, at all times manual board was always available displaying relevant parameters. It is submitted that the electronic/LED display board is in addition to the manual

S.No	Observations of the Committee	HPCL Reply
	VOC, etc. data are not being displayed.	<p>display boards which are being maintained at all times.</p> <p>New LED display board for display of various environmental parameters like stack emissions, ambient air quality and liquid effluent quality was installed which was under commissioning during the Joint Committee visit. The same was commissioned by end of March 2021. The photos of the same are enclosed in Attachment-VII.</p>
	<p>xiv. Thick black smoke emissions from the flare stacks were observed during inspection of the refinery. APPCB officials have also recorded in their reports during inspection of the refinery on 16.07.2020 and 30.11.2020, which indicate escape of incomplete and unburnt aromatic and aliphatic hydrocarbon emissions into the atmosphere</p>	<p>Flares were normal during inspection by joint committee. However, the black smoke observed by the committee was from one of the boiler stacks due to soot blowing activity which is normal and lasts for very short duration. The soot blowing is carried out as part of regular operational activity to maintain efficiency of boiler and thereby reduce fuel consumption.</p> <p>With reference to observations during earlier inspections in July and November 2020, it is submitted that smokeless flare stack is maintained by ensuring complete combustion all the times. Black smoke is observed only during upset scenarios (disturbance in the plant working due to power failure, etc.), which is a very rare incident and that too for extremely short durations of time. This momentary smoke during upset scenarios such as power failure is a normal phenomenon in petroleum refinery industry.</p>
	<p>xv. Refinery does not have the inventory of unrecoverable volatile organics venting</p>	<p>Accounting of the flared quantity is done regularly and it is a part of the refinery material balance.</p>

S.No	Observations of the Committee	HPCL Reply
	through the flare stacks for burning.	
	xvi. It has been observed that, vide EC dated 03.02.2004 and 02.09.2009 project was under expansion from 7.5 to 10.0 MMTPA. As per EC dated 11.02.2016, project is under expansion from 8.33 MMTPA to 15.0 MMTPA. However, during inspection, no information has been provided for expansion of project from 7.5 to 8.33 MMTPA	<p>The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below:</p> <p>Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs:</p> <p>CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA</p> <p>New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p>
	xvii. It has been observed that the PAs are submitting the six	Compliance of Earlier ECs and monitored data of air, water, noise, etc. are submitted to MoEF

S.No	Observations of the Committee	HPCL Reply
	<p>monthly compliance reports with respect to latest EC dated 11.02.2016 only. However, compliance status of earlier granted EC's and monitored data of air, water, noise, etc. are not being submitted.</p>	<p>Office at Chennai vide letter no: Project-Process/21/VRMP/003 dated 06.11.2021. As advised, the same was sent to Integrated Regional Office, MoEFCC, Vijayawada.</p>
	<p>xviii. Compliance of standards/norms in terms of fugitive emissions and VOC emissions monitoring at ETP area are not being implemented as per Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18th March, 2008.</p>	<p>APIs and TPIs in ETPs are provided with covers to minimize VOC emissions. VOC emissions are monitored periodically and controlled as part of LDAR survey.</p> <p>VOC recovery system is being implemented in the IETP (Integrated Effluent Treatment Plant) which is envisaged in the ongoing refinery expansion project. The existing ETPs will be non-operational post IETP commissioning.</p>
	<p>xix. The project had not provided a mobile laboratory with adequate facility to monitor ambient air quality outside the refinery premises. The condition has been imposed in the EC dated 30.05.1995. However, till date mobile laboratory was not provided.</p>	<p>Visakh Refinery is regularly carrying out Ambient air quality monitoring outside its refinery premises (Malkapuram) through a MoEF recognized third party laboratory once in a month.</p> <p>This monitoring is viable alternative to having a mobile laboratory and it was able to effectively fulfill all the functions of having a mobile laboratory. It is submitted that the concerned authorities were satisfied with the alternate arrangement and hence the condition was either not repeated in subsequent ECs nor there is any remark to this effect.</p>
	<p>xx. As per CFO, there were 35 stacks were present in the project. However,</p>	<p>It is to be noted that the following 3 stacks attached to</p> <ol style="list-style-type: none"> 1. PP-I utility boiler (WIL-8)

S.No	Observations of the Committee	HPCL Reply
	continuous on- line stack monitoring facilities were provided for 32 stacks only.	2. CPP HRSG-I 3. CPP HRSG-II are not operational for past few years since these are no more required for operation of the Refinery and accordingly planned for dismantling. Hence, the continuous on-line stack monitoring facilities and their connectivity are not provided.
	xxi. Monitoring of process emissions viz., SO ₂ , NO _x , HC (Methane & Non-methane). VOCs and Benzene from various units is not being done.	Monitoring of SO ₂ , NO _x , CO, PM, HC, VOCs and Benzene is being done regularly in refinery premises. Online connectivity of stack emissions analyzers is established with CPCB and APPCB servers. Further, stack emission monitoring is being carried out by MoEF recognized laboratory on monthly basis. Reports of recent three months (August 2021, September 2021 & October 2021) are enclosed in Attachment-VIII . VOCs and Benzene within refinery premises are being monitored periodically and controlled as part of LDAR survey carried out by MoEF recognized third party.
	xxii. The monthly Sulphur balance sheet of the refinery along with six monthly compliance reports.	Monthly Sulphur balance sheets are being provided to APPCB during inspection of the refinery. Copy of latest Sulphur balance sheets of September 2021 & October 2021 are enclosed as Attachment-IX .
	xxiii. Facilities for monitoring of H ₂ S, mercaptan, non-methane-HC and Benzene at all CAAQ monitoring stations is not being done	H ₂ S, non-methane-HC, Mercaptan and Benzene analyzers are available at all the 3 CAAM stations.
	xxiv. The comprehensive water audit reports on annual	Water consumption details are being submitted to APPCB during

S.No	Observations of the Committee	HPCL Reply
	basis are not being submitted to Ministry's Integrated Regional Office.	inspections. Water audit report is under preparation and shall be submitted after finalization of the report.
	xxv. It has been observed that the PAs are in process of developing green belt in and around the plant premises. However, it has been observed that the plantation around the project area is not satisfactory.	<p>Refinery operation requires more space. As there is shortage of space in refinery, for this shortfall in greenbelt, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB".</p> <p>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE. Above plantation measures provide a green cover more than the present shortfall of green belt within the refinery. Further, green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernization project).</p> <p>This implies that even though there is shortage of space, HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as</p>

S.No	Observations of the Committee	HPCL Reply
		achieving 100% target by APPCB in action taken report dated 10.11.2021.
	xxvi. Uploading of environmental statement for each financial year ending 31st March in Form-V on company's website is not being done.	Form-V for the year 2020-21 is uploaded in HPCL's corporate website.

27. With regard to para 10, it is submitted that below tabulation is reply to measures suggested by Joint committee to mitigate pollution.

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
10	i. The unit should comply with the all the conditions mentioned in the CFO and hazardous waste authorization and also the directions issued by APPCB for effective and safe operation of the refinery so as to mitigate the pollution to possible extent.	It is submitted that the CFO conditions are regularly complied with. The Committee did not specifically highlighted any violation of CFO condition. Compliance to CFO conditions and Task force directives of APPCB are enclosed as Attachments-II & III respectively.
	ii. The unit should take necessary steps to reduce the PM10 & PM2.5 values in ambient air within the industry premises, the values in the CAAQMS in all the three locations shows the exceedances throughout the year 2020. The unit should spray water on the road and to plan the timings for the movement of vehicles inside the industry to control the fugitive emissions.	Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. are taken up regularly to control dust emissions. The project civil jobs are also nearing completion. Besides, it is observed that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m ³ and 60 µg/m ³ , respectively in the entire Vishakhapatnam city and

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
		therefore, HPCL refinery is not responsible for the same as has been explained in the submissions above at Paragraph 15 of the Objections. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.
	iii. The five stacks monitored are meeting the prescribed standards, however, two stacks which were not monitored due to some issue in the stack monitoring platform has to be rectified.	It is submitted that Joint committee had planned to collect flue gas samples from 5 stacks. However, samples from 2 stacks could not be collected due to Eagle attack while climbing up the sample collection platform. Hence, Joint committee decided to collect samples from 2 other stacks and thus samples were collected from 5 stacks as per the plan. Subsequently, the Eagle attack issue was addressed and safe access to the sample collection platform of these 2 stacks was ensured.
	iv. Refinery has provided OCEMS in 32 stacks to monitor PM, SO ₂ , NO _x & CO and remaining 4 stacks has to be installed. The OCEMS data are connected to CPCB & APPCB servers. CEMS for measuring Hydrocarbons are yet to be installed. A few exceedances were observed during March, 2021. The industry should take periodic calibration and maintenance of	The total number of stacks in refinery are 35. OCEMS are provided for 32 stacks. The remaining 3 stacks attached to PP-I utility boiler (WIL-8), CPP HRSG-I, CPP HRSG-II are not operational for past few years since these are no more required for operation of the Refinery and accordingly planned for dismantling. Hence, the continuous on-line stack monitoring facilities and their connectivity are not provided for these 3 stacks. Hydrocarbon

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
	analysers to avoid the exceedances in standards.	<p>analysers are available for stacks in refinery.</p> <p>All stack analyzers are calibrated once in a month on regular basis to ensure the measured values are within the allowable range of the drift.</p>
	v. The unit should rectify and repair the ETP-II components for effective treatment, the effluent spilled near the TPI area should be cleaned. The storm water drains near the ETP-II and final outlets have to be cleared for free flowing and to avoid stagnations. The small pump has to be installed in the tank constructed to collect the rain water near the guard pond to avoid manual transportation of the rain water to the ETP.	Housekeeping of the TPI area was completed. The storm water drains near the ETP-II are cleared regularly. The recommendation given by the JC for installation of pump in the tank is taken up for implementation.
	vi. The ETPs should be operated regularly and effectively for meeting the prescribed discharge standards. The unit should install covers either floating /fixed types in the oil-water separator and equalization tanks to trap the VOCs for eliminating the odours. The trapped off-gas has to be treated to remove at least 90% of VOCs.	<p>ETPs are in service and treated process water is meeting the stipulated standards.</p> <p>APIs and TPIs in ETPs are provided with covers to minimize VOC emissions. VOC recovery system is being implemented in the IETP (Integrated Effluent Treatment Plant) which is envisaged in the ongoing refinery expansion project. The existing ETPs will be non-operational post IETP commissioning.</p>
	vii. The unit should recycle the treated water to the maximum extent to reduce the fresh water	Stripped sour water from process units is being recycled to the maximum possible extent with

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
	consumption instead of fully discharging into sea along with cooling water.	the available systems for use as wash water. In addition, a new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully.
	viii. At present the unit is monitoring the LDAR program annually through third party laboratory. According to the standards for equipment leaks and good practices, it is advised to conduct the quarterly monitoring of LDAR for pump seals, compressor seals, pressure relief devices & heat exchangers and annually monitor the process drains & components that are difficult to monitor.	Leak Detection and Repair (LDAR) survey is being carried out on continuous basis by MoEF recognized laboratory and the frequency of survey is in line with MoEF guidelines. Survey reports are being maintained and are shared during inspection by APPCB.
	ix. The high oily sludge from the crude and products tanks stored in the sludge lagoons has producing VOCs, the unit has to take necessary steps to eliminate the VOCs odour in the area.	VOC measured at sludge lagoon ponds by hand held instrument showed 8 - 9 PPM. Few meters away from the sludge lagoon ponds, the VOC measurement done by same hand held instrument in presence of Joint committee showed Nil VOC. These VOCs are confined at local area and are not carried to other areas of the refinery.
	x. The housekeeping at the sludge processing area has to be improved, the unit may take necessary action against the third party laboratory for causing spillages during	Housekeeping improved in sludge processing area is carried out on regular basis. Actions are being taken to sustain the same. The current photographs at Sludge processing area are enclosed as Attachment-VI .

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
	sludge processing and advise to avoid spillages.	
	xi. The bio-remediation of the low oily sludge has to be carried out technically and avoid dumping of unwanted waste in the bins. Before using the treated sludge as manure, it is required to analyse to check that the oily sludge is completely degraded. The oil contents in terms of Total Petroleum Hydrocarbon (TPH) after bioremediation are less than 1%.	Low oily sludge is being bio-remediated with Oil Zapper bacteria which is patented by M/s OTBL (ONGC TERI Biotech Limited) to bring down the TPH content to less than 1%. The bioremediated low oily sludge is either used for direct landfill or manure. Necessary actions like installation of caution boards were taken to avoid dumping of unwanted waste in the bins.
	xii. To develop 33% of total area as a green belt along the industry premises to stop the odour issues as well as to eliminate the fugitive emissions. The unit may plant the odour eliminating plants suitable for refinery industry.	All the areas in refinery feasible for development of greenbelt are provided with plants suitable for attenuation of air pollution.
	xiii. Refinery shall work out mass & material balance studies and maintain the inventory of unrecoverable volatile organics venting through the flare stacks for burning Records to this effect shall be produced before the regulatory officials as and when required.	Accounting of the flared quantity is done regularly and it is a part of the refinery material balance.
	xiv. Suggested that the refinery shall procure, install and operate one Continuous Ambient Air Quality Monitoring station (CAAQMS) with PM 10, PM2.5, CO, O3, SO2, NO2, NH3, Benzene, H2S and	Noted for compliance. Will be taken up for implementation in consultation with APPCB. Visakh Refinery is regularly carrying out Ambient air quality monitoring outside its refinery premises (Malkapuram) through

S.No	Suggested remedial measures to mitigate pollution	HPCL Reply
	Mercaptans parameters at an appropriate location in the residential areas of Malkapuram to assess the impact of refinery activities.	a MoEF recognized third party laboratory once in a month.

28. With regard to para 11, it is submitted that following are tabulation with regard to the concluding remarks.

S.No	Concluding Remarks:	HPCL Reply
11	a. The unit is not complying the majority of condition stipulated in Environmental Clearances granted to Visakha Refinery.	Compilation of compliance to all ECs is being done as per the Annexure - 12 of the Joint Committee Report read with the Attachment-I (Colly.) of this Reply.
	b. The unit is not complying with the majority of consent & authorization conditions issued by APPCB on March 9, 2021. These are the same conditions given by APPCB at the time of consent & authorization renewal.	<p>The latest CFO compliance is enclosed as Attachment-II.</p> <p>It is submitted that the committee inspected our premises on 25.03.2021 in just 2 weeks after receipt of latest CFO dated 09.03.2021.</p> <p>Total CFO conditions are 84 (Schedule A-13, Schedule-B-53 and Schedule C-18) out of which 81 conditions are complied with and action initiated for implementation of remaining 3 conditions. These 3 conditions are stipulated in this new CFO and were not there in any of the previous CFOs.</p> <p>As observed by the committee, these items do not have any impact on environment.</p>
	c. APPCB had issued 16 points directions for non-compliance on March 19, 2020; the unit is	The compliance for Task force directives is enclosed as Attachment-III.

S.No	Concluding Remarks:	HPCL Reply
	not complying for 6 points and partially complied for one point even after one year.	Out of 16 Task force directives, 15 are complied with and 1 directive (to carry out odour study) is under implementation.
	d. The committee had monitored stack emissions at five stacks. Manual ambient air quality monitoring at three locations and CAAQM using mobile van at two locations. The stack emissions are meeting the prescribed standards, the ambient air quality for PM10, PM2.5 parameter is exceeding at all the five locations, at one point near the ETP-IV area the concentration value of SO ₂ is exceeding the standards.	<p>PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same as has been explained in the submissions above at Paragraph 15. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station at North west corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. The 24hr Average SO₂ value recorded in the Store Yard CAAMS station near the same location (approx. 100 meters away) was within the prescribed limit.</p> <p>As mentioned in the JC report and the values recorded in the APPCB mobile CAAQM station, all the parameters were well within the standard. Further, the stack monitors also support that the emissions are within prescribed limits. This indicates the emissions from the refinery</p>


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S.No	Concluding Remarks:	HPCL Reply
		have not resulted in exceedances of ambient air quality parameters in the nearby residential area.
	e. The effluent discharge standards for the ETP outlet of I & IV are not meeting, however due to mixing of one time cooling water with the treated effluent at final discharge point, the prescribed discharge parameters are meeting the standards.	As mentioned earlier, analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Further, from Table 14 of the JC Report, it is evident that the pollution loads of MINAS parameters are much below the CFO stipulated limits.
	f. The committee calculated the prescribed pollution load for effluent & emission in CFO and are meeting the prescribed standards.	Noted being statement of fact.
	g. The committee calculated environmental compensation for violation & non-compliance of the directions issued by APPCB and levied Rs. 89,04,000/- (Rupees eighty nine lakhs and four thousand only). M/s. HPCL, Visakha Refinery has to pay Rs. 89,04,000/- to APPCB.	It is submitted that HPCL-VR is complying with all the conditions mentioned in various ECs, CFO and Taskforce directives. The detailed compliance status of these conditions is provided in Attachment-I (EC conditions), Attachment-II (CFO) and Attachment-III (Taskforce directives). The Report itself observes that activities of refinery are within the prescribed parameters. The Joint Committee is empowered to recommend compensation only if any violation is found causing environmental degradation, and in this case there is no violation causing environmental degradation found by the joint committee. Hence, there cannot be any

S.No	Concluding Remarks:	HPCL Reply
		<p>question of assessing environmental compensation.</p> <p>Furthermore, as per the directions of NGT, the Joint Committee had to ascertain the source of pollution (if any). The Joint Committee has found in its report that HPCL-VR is complying with all prescribed parameters. Hence, even if there is any pollution as alleged, the same appears to be from other sources outside the refinery, as the refinery is situated in a designated industrial area and surrounded by many other industries. The Joint Committee has made no attempt to ascertain the actual source as required by the directions of the NGT.</p> <p>Most of the suggestions/recommendations of the Joint Committee are for further improvisation, even though the same are not mandated by the CFO terms. The answering Respondent, being a CPSE has highest regard and concern for environmental issues and is regularly taking steps to ensure that its activity are within the parameters specified in the CFO.</p> <p>View above, it is humbly submitted that NGT should not consider levying any environmental compensation on the respondent, HPCL-VR.</p>
	h.The unit have to ensure self-monitoring, self-compliance and comply with statutory guidelines, safety measures, and directions issued by	Refinery operations are carried out as per stipulated norms and well established systems & procedures are in place to ensure compliance to the

S.No	Concluding Remarks:	HPCL Reply
	MOEF & CC, CPCB, APPCB, Directorate of Factories and other Regulatory Authorities.	statutory guidelines and directions issued by MOEF&CC, CPCB, APPCB, Directorate of Factories and other Regulatory Authorities.

29. It is submitted that on careful perusal of the JC Report it is clear that there is no damage whatsoever or degradation of any nature caused to the environment by this Respondent. It is further submitted that on perusal of the replies of this Respondent to the Joint Committee Report as well as the main application, it can be seen that all the criteria and conditions under the various environmental clearances, consents for operation, taskforce directives and IISc report recommendations, have been fully complied with in letter and spirit.

30. It is humbly submitted that without any evidence of environmental damage or degradation attributable solely to this Respondent, there cannot be any assessment of environmental damage compensation. When there is no violation by this Respondent and there has been general compliance with all clearances, permissions etc., this Respondent cannot be made to be liable for paying any compensation to the environmental authorities.

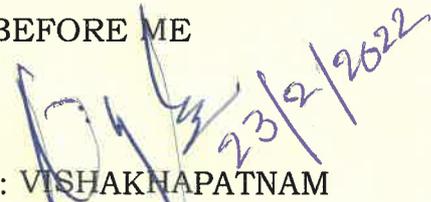
It is therefore most respectfully prayed that this Hon'ble Tribunal may be pleased to dismiss the above application as against the 7th Respondent and thus render justice.

Solemnly affirmed at Vishakhapatnam
on this the twenty third day of February, 2022 and
signed his name in my presence.


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BEFORE ME

NOTARY: VISHAKHAPATNAM


N. NAGESWARA RAO M.Com., B.L.,
ADVOCATE & NOTARY
Main Road, Sriharipuram,
VISAKHAPATNAM-530 011

Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

In this submission, only the EC Conditions wherein the joint committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC conditions.

S.No	EC Conditions	Joint committee Observation	HPCL Reply
1	The project authority must strictly adhere to the stipulations made by the A.P. Pollution Control board and the State Government.	Partially Complied It is required to strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board (APPCB), State Government and any other Statutory authority.	It is submitted that this EC condition is complied with in both letter and spirit. The Joint Committee Report does not identify the stipulations which HPCL-VR has failed to adhere to. The Refinery is currently complying with the conditions stipulated in CFO No:APPCB/VSP/VSP/72/CFO/HO/2021 dated 09.03.2021 and task force directives which were identified by APPCB vide letter no.702/APPCB/UH-II/TF/VSP/2020 dated 19.03.2020. The compliance status of APPCB task force directives is elaborated in Attachment -III.
2	Any expansion of the plant, either with the existing product mix or new product(s) or storage facilities etc. /can be taken up only with the prior proposal of this Ministry.	Partially Complied It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.	At the outset and without prejudice to the other contentions in this respect, it is submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore, it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/ permitted for capacity expansion.


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S.No	EC Conditions	Joint committee Observation	HPCL Reply
			<p>The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below:</p> <p>Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA New CDU: CDU-IV- 9.0 MMTPA</p>


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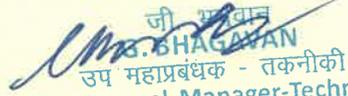
Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
			<p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p> <p>In any event, it is submitted that the condition has been complied with by HPCL-VR.</p> <p>Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery, it can be seen that there has been proper approvals and permissions from the concerned authorities.</p>
4	<p>The gaseous emissions from various process units should conform to the standards prescribed by the concerned authorities/from time to time. At no time, the emission level should go beyond the stipulated standards. In the event of failure of any pollution control system(s) adopted by the unit, the respective unit should be shut down immediately and should not be restarted until the control measures are rectified to achieve the desired efficiency.</p>	<p>Partially Complied</p> <p>It is required to monitor process emissions viz., SO₂, NO_x, HC, VOCs and Benzene from various units and monitoring reports to be submitted along with six monthly compliance reports on regular basis.</p>	<p>It is submitted that the condition has been complied with by HPCL-VR. Monitoring of SO₂, NO_x, CO, PM, HC, VOCs and Benzene is being done regularly in refinery premises. Online connectivity of stack emissions analyzers is established with CPCB and APPCB servers. Further, stack emission monitoring is being carried out by MoEF recognized laboratory on monthly basis.</p> <p>VOCs and Benzene within refinery premises are being monitored periodically and controlled as part of LDAR survey carried out by MoEF recognized third party.</p>


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Compliance to VREP EC J-1101/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
7	Adequate ambient air quality monitoring stations should be set up in the refinery area in the down wind direction as well as where maximum ground level concentrations of SO ₂ , NO _x , HC and SPM are anticipated. The monitoring network should be decided based on the modelling exercise to represent the short term GLCs. A mobile van with adequate facilities to monitor ambient air quality outside the refinery premises should also be planned.	<p>Partially Complied</p> <p>It is required to take adequate measures to control the PM10, PM2.5 and SO₂ in the ambient air of the project surroundings. It requires immediate action.</p>	<p>It is submitted that the condition has been complied with by HPCL-VR. Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. were taken up regularly to control dust emissions. The project civil jobs are also nearing completion.</p> <p>However, it is observed that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station placed during the inspection at North west</p>


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S.No	EC Conditions	Joint committee Observation	HPCL Reply
		<p>It is required to provide a mobile van with adequate facilities to monitor ambient air quality outside the refinery premises. It requires immediate action.</p>	<p>corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. However, the 24hr Average SO₂ value recorded in the Store Yard CAAMS station near the same location (approx. 100 meters away) was within the prescribed limit.</p> <p>H₂S, non-methane-HC, Mercaptan and Benzene analyzers are available at all the 3 CAAM stations.</p> <p>HPCL-Visakh Refinery has been regularly carrying out ambient air quality monitoring outside the refinery (Malkapuram) thru an MOEF recognized third party Laboratory once in a month.</p> <p>This monitoring is viable alternative to having a mobile laboratory and it was able to effectively fulfill all the functions of having a mobile laboratory. It is submitted that the concerned authorities were satisfied with the alternate arrangement and hence this condition was neither repeated in subsequent ECs nor was there any remark regarding the same.</p>
8	Fugitive emissions of HC from storage tanks, crude oil tanks etc., should be minimised by adopting necessary measures.	<p>Partially Complied</p> <p>It is required to submit the fugitive emissions monitoring to be conducted at</p>	<p>It is submitted that HPCL-VR has complied with the condition. The EC condition only requires adoption of necessary measures to</p>


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
9	Adequate facilities for monitoring the fugitive emissions should be planned.	storage tanks, crude oil tanks and processing locations and the monitoring reports to be submitted along with six monthly compliance reports on regular basis.	minimize fugitive emission, and there is no condition stating that reports need to be submitted to any authority. However, it is submitted that Leak Detection and Repair (LDAR) survey is being carried out regularly by MoEF recognized third party laboratory for monitoring fugitive emissions. These reports are being reproduced during inspection by APPCB and CPCB officials. In future, the same will be submitted along with six monthly compliance reports as recommended by the Joint Committee in its Report. It is submitted that the reports are maintained regularly, which is in compliance with CFO/EC conditions.
10	The stacks should be of appropriate design and height and should be attached to pollution control systems wherever necessary. Height of stacks attached to crude oil furnace and waste heat boiler should be increased to the maximum height as permitted by the Civil Aviation Department. Continuous on-line stack monitoring equipment for measurement of SO ₂ & NO _x should be installed. The monitored data should be submitted to SPCB every 3 months and every 6 months to the Ministry of Env.& Forest for review.	Partially Complied It has been observed that, as per CFO, there were 35 stacks were present in the project. However, continuous online stack monitoring facilities were provided for 32 stacks only. It is required to provide the same for rest of three stacks also.	It is submitted that HPCL-VR has complied with this condition. It is to be noted that the following 3 stacks attached to 1. PP-I utility boiler (WIL-8) 2. CPP HRSG-I 3. CPP HRSG-II are non-operational for past few years since these are no more required for operation of the Refinery and accordingly planned for dismantling. Hence, the continuous on-line stack monitoring facilities and their connectivity for these 3 stacks are not provided.


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
11	The existing waste water treatment facilities should be suitably augmented so as to meet the MINAS standards.	<p>Partially Complied</p> <p>It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate measures.</p> <p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents</p>	<p>ETPs were augmented to meet MINAS standards. Hence, the EC condition is complied with.</p> <p>With regard to joint committee observation, HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details</p>


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
		<p>It is required to make efforts to recycle the treated effluent to achieve zero discharge and the treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.</p>	<p>and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p> <p>A new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p>
12	<p>Recycling/Reuse of the treated effluent to the maximum extent possible should be planned.</p>	<p>Not Complied It is required to recycle/reuse the treated effluent to the maximum extent possible.</p>	<p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p> <p>In addition, a new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/resused fully.</p>


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
13	Adequate number of influent and effluents quality monitoring stations have to be planned with adequate facilities especially for the parameters like phenols, sulphides / oil and grease, suspended solids BOD, COD, PH and flow.	Partially Complied It is required to install/upgrade online monitoring facilities for monitoring of parameters like phenols, sulphides, O&G, suspended solids at final treated effluent discharge locations.	Online liquid effluent monitoring facilities are available for pH, TSS, BOD and COD in line with CPCB guidelines and connectivity of these analyzers established with APPCB and CPCB servers. Flowmeters are available on sea cooling water supply headers. Further, the treated effluent quality is being monitored by MoEF recognized Third Party laboratory on monthly basis. Hence, it is submitted that HPCL-VR is complying with this condition.
17	The density of green belt within the Plant premises should be increased using native plant species in consultation with the local DFO.	Partially Complied It is required to develop thick green belt with suitable species as per CPCB guidelines in consultation with local DFO.	It is submitted that refinery operation requires large area and hence, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB". It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE.


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
			<p>Above plantation measures provide a green cover more than the green belt requirements. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernization project).</p> <p>This implies that HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation, and is complying with the CFE condition. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by APPCB in action taken report dated 10.11.2021.</p>
18	Various socio-economic schemes should be initiated by HPCL, so to improve the socio economic environment in the region.	<p>Partially Complied</p> <p>It is required to provide the detailed report regarding implementation of various socio-economic schemes along with expenditure incurred for last three years.</p>	<p>Various developmental activities such as construction of toilet blocks, supply of furniture, supply of computers, scholarships to students, health camps, supply of diagnostic machines etc., are taken up in schools & hospitals in the region under Corporate Social Responsibility (CSR) program. The details were submitted to the Joint Committee during inspection. Hence, HPCL-VR is compliant with the EC condition on a regular basis.</p>


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Compliance to VREP EC J-11011/22/94-IA II (I) dated 30.05.1995

S.No	EC Conditions	Joint committee Observation	HPCL Reply
19	Recommendation made by NEERI in the EMP should be implemented and action plan for implementation of the same should be submitted to the Ministry for review.	Partially Complied It is provide detailed report regarding the implementation of recommendations made by NEERI in EMP of the project.	NEERIs recommendations and action plans were submitted to MoEF as required by under the EC conditions. Hence, the HPCL-VR is complying with the EC condition.
25	The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this ministry.	Partially Complied It is required to provide detailed report on expenditure incurred for environment pollution control measures to implement the conditions stipulated by the ministry as well as state government along with the implementation schedule for all the conditions stipulated herein for last three years.	The funds earmarked for environmental protection measures are being used for the same purpose only and there is no diversion of the funds. The expenditure incurred towards environmental pollution control measures is being provided in Environment Statement (Form-V) every year. The same was submitted to Joint committee during inspection. Hence, HPCL-VR is complying with the EC condition.


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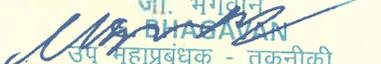
Compliance to EC No.J-11011/88/96-IA-II (I) dated 10.04.1997

In this submission, only the EC Conditions wherein the Joint Committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC conditions:

S.No	EC Conditions	Joint Committee Observations	Reply by HPCL-VR
1	The project authority must-strictly adhere to the stipulations laid down by the Andhra Pradesh State Pollution Control Board and the State Govt	Partially Complied It is required to strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board (APPCB), State Government and any other Statutory authority.	It is submitted that this EC condition is complied with in both letter and spirit. The Joint Committee Report does not identify the stipulations which HPCL-VR has failed to adhere to. The Refinery is currently complying with the conditions stipulated in CFO No:APPCB/VSP/VSP/72/CFO/HO/2021 dated 09.03.2021 and task force directives which were identified by APPCB vide letter no.702/APPCB/UH-II/TF/VSP/2020 dated 19.03.2020. The compliance status of APPCB task force directives is elaborated in Attachment-III.
2	No expansion or modernization of the plant should be carried out without prior approval of the Ministry of Environment and Forests	Partially Complied It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.	At the outset and without prejudice to the other contentions in this respect, it submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/permitted for capacity expansion. The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below: जी. भगवान

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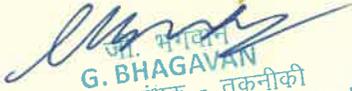
S.No	EC Conditions	Joint Committee Observations	Reply by HPCL-VR
			<p>Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p> <p>In any event, it is submitted that the condition has been complied with by HPCL-VR.</p> <p>Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery, it can be seen that there has been proper approvals and</p>


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S.No	EC Conditions	Joint Committee Observations	Reply by HPCL-VR
			permissions from the concerned authorities.
4	The existing ETP should be adequately augmented (if required) to accommodate the additional effluent from the DHDS project before commissioning project so as ensure the treated effluent meets the MINAS	<p>Partially Complied It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate measures.</p> <p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p> <p>It is required to make efforts to recycle the treated effluent to achieve zero discharge and the</p>	<p>HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p>

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S.No	EC Conditions	Joint Committee Observations	Reply by HPCL-VR
		treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.	<p>A new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p>
7	The ground water quality should be regularly monitored and report submitted to the Ministry every six months.	<p>Partially Complied</p> <p>It is required to submit the ground water quality monitoring reports along with six monthly compliance reports to Ministry's Integrated Regional Office at Vijayawada on regular basis.</p>	Ground water quality monitoring is being carried out by MoEF recognized third party laboratory once in every six months and the reports are provided to statutory authorities during inspection. The same will be included in six monthly compliance reports too.


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EC Compliance for No.J-11012/55/2003-IA-(I) dated 03.02.2004

In this submission, only the EC Conditions wherein the joint committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC conditions.

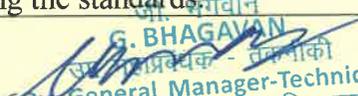
S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
1	The SO ₂ emissions and HC emissions shall remain same at 11.5 TPD and 2.5 TPD respectively, reduction in the SPM and NO _x emissions from 1.45 TPD to 1.11 and 6.6 to 6.5 TPD respectively by installation of integrated FGD unit in the CFP process and low NO _x burners.	Partially Complied It is required to submit the monthly Sulphur balance sheet of the refinery along with six monthly compliance report on regular basis to Integrated Regional Office (IRO), Vijayawada.	It is submitted on bare perusal of the observations in the Joint Committee Report, it can be seen that emission of SO ₂ is effectively managed and it is within the parameters set-out in the CFO. Sulphur balance of the refinery is being submitted to APPCB on monthly basis. The same will be submitted to MoEF Integrated Regional Office along with six monthly compliance reports.
2	Comprehensive waste water management system and recycling and reuse of treated effluent so that the total treated effluent should not exceed a maximum of 542 m ³ /hr	Partially Complied It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate. It has been observed that the values	It is submitted that the quantity of total treated effluent which has been prescribed under EC dated 03.02.2004 has been changed and HPCL-VR is complying with the presently applicable EC and CFO conditions. HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.. Analysis results of ETP-I & ETP-IV treated effluent

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S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
		<p>of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p> <p>It is required to make efforts to recycle the treated effluent to achieve zero discharge and the treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.</p>	<p>samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p> <p>A new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p>
4	The company shall comply with all the conditions stipulated by this Ministry vide its letter no. J-11011/88/96-IA-11 (I) dated 10th April, 1997.	<p>Partially Complied</p> <p>It is required to submit the status of compliance to all the environmental conditions stipulated in the EC letter no. J-11011/88/96-IA-11 (I) dated 10th April, 1997 on six monthly basis to Ministry's Integrated Regional Office, Vijayawada.</p>	It is submitted that the EC condition does not mandate submission of compliance report to Regional Office of MoEF. The Joint Committee has observed the HPCL-VR is complying with the conditions. Hence, it is submitted that HPCL-VR is in compliance to the EC condition. In any event, it is submitted that status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office, and so there is no violation of EC conditions.


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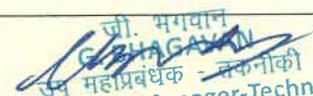
S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
6	<p>The fresh water consumption should be pegged at 523 m³/hr after the proposed modernization. The additional water required, if any, should be met through recycling/reuse of treated effluent.</p>	<p>Partially Complied</p> <p>It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate.</p> <p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p>	<p>It is submitted that the maximum permitted quantity of fresh water consumption which has been prescribed under EC dated 03.02.2004 has been changed and HPCL-VR is complying with the presently applicable EC and CFO conditions.</p> <p>HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p>


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S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
		<p>It is required to make efforts to recycle the treated effluent to achieve zero discharge and the treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.</p>	<p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p> <p>A new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p>
8	<p>All the recommendations made in the Risk Analysis Report should be complied with during design, construction and operation stages to contain the risk within the plant boundary.</p>	<p>Partially Complied It is required to provide detailed report on causes of fire, equipment/detector failure, fire control measures taken, workers present at the location during incident and their present status to be provided.</p>	<p>At the outset, it is submitted that this is a general comment. The Risk Analysis Report relates to a specific project and the same has been implemented as required. Further, in case of any fire incident, the concerned authorities are promptly informed of the same.</p> <p>All the facilities are designed in line with OISD (Oil Industry Safety Directorate) standards. Necessary infrastructure is in place to effectively handle any emergency.</p> <p>With regard to observation by joint committee, all the details of the fire incident were submitted to joint committee. Thus, the EC condition is complied with.</p>
9	<p>No further modernization of the project should be carried out without prior permission of the Ministry.</p>	<p>Partially Complied It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.</p>	<p>At the outset and without prejudice to the other contentions in this respect, it submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/permitted for capacity expansion.</p>


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S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			<p>The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below:</p> <p>Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA</p> <p>New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p>


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S.No	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			<p>In any event, it is submitted that the condition has been complied with by HPCL-VR.</p> <p>Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery, it can be seen that there has been proper approvals and permissions from the concerned authorities.</p>
10	<p>Implementation of the project vis-à-vis Environmental management / risk mitigation measures should be reported to the Ministry / Regional Office / State Pollution Control Board regularly on a six-monthly basis.</p>	<p>Partially Complied</p> <p>It is required to submit the compliance status of environmental conditions stipulated in the environmental clearance letter no. J-11011/22/94-A II (I) dated 30th May, 1995, F. No. J-11011/88/96-IA II(I) dated 10th April, 1997, J-11013/55/2003-IA II (I) dated 3rd February, 2004 and J-11011/66/2007-IA II (I) dated 7th March,2008 and J-1 1011/408/2009-IA II (I) dated 2nd September, 2009 along with all environmental monitored data on six monthly basis to Ministry's Integrated Regional Office, Vijayawada. The same should be uploaded on company's website.</p>	<p>It is denied that compliance status of ECs are not being reported to the concerned authorities or there is failure in uploading on the company's website. Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.</p>


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EC Compliance for LPG Mounded Storage dated 07.03.2008

In this submission, only the EC Conditions wherein the joint committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC conditions.

	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
1	All the safety and security systems provided in Risk Analysis Report for the Project shall be implemented. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the Environmental Management Plan and Risk Analysis Report submitted to the Ministry vide letter no. CEE/07/MLVR/056 dated 19th October 2007.	Partially Complied It is required to provide detailed report on causes of fire, equipment/detector failure, fire control measures taken, workers present at the location during incident and their present status to be provided.	At the outset, it is submitted that this is a general comment. The Risk Analysis Report relates to a specific project and the same has been implemented as required. Further, in case of any fire incident, the concerned authorities are promptly informed of the same. All the facilities are designed in line with OISD (Oil Industry Safety Directorate) standards. Necessary infrastructure is in place to effectively handle any emergency. With regard to observation by joint committee, all the details of the fire incident were submitted to joint committee. Thus, the EC condition is complied with.
3	Regular Ambient Air Quality Monitoring shall be carried out for VOC, HC and LPG, besides other parameters in the Work Zone Area and ambient air in and around the Plant. The location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind	Partially Complied It is required to monitor H2S, mercaptan and non-methane-HC at all AAQ monitoring stations. It is required to take appropriate measures to control the PM10, PM2.5 and SO2 emissions in the project area. It is required to take adequate measures to control the PM10, PM2.5 and SO2 in the	H2S, Mercaptan and non-methane HC analyzers are available at all the 3 CAAM stations. Various measures like water sprinkling on the roads at project sites, higher barricades around project sites,

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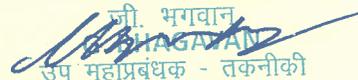
	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
	<p>direction of wind. Additional Stations shall be set up, if required.</p> <p>It will be ensured that at least one monitoring station is set up in up-wind & in down-wind direction along with those in other directions. Data shall be submitted to MoEF, CPCB and TNPCB.</p>	<p>ambient air of the project surroundings. It requires immediate action.</p>	<p>regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. were taken up regularly to control dust emissions. The project jobs are nearing completion.</p> <p>However, it is observed that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station placed during the inspection at North west corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. However, the 24hr Average SO₂ value recorded in the Store Yard CAAMS station near the same location (approx. 100 meters away) was within the prescribed limit.</p>
4	Fugitive emissions in the work zone environment of storage area shall be	Partially Complied	It is submitted that HPCL-VR has complied with the condition. The EC


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	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
	regularly monitored. The emissions shall conform to the limits imposed by the State Pollution control Boards/Central Pollution Control Board.	It is required to submit the monitoring reports of fugitive emissions of HC from the product storage tank yards work zone near the storage tanks besides monitoring of HCs/VOCs in the work zone along with six monthly compliance reports on regular basis.	condition only requires adoption of necessary measures to minimize fugitive emission, and there is no condition stating that reports need to be submitted to any authority. However, it is submitted that Leak Detection and Repair (LDAR) survey is being carried out regularly by MoEF recognized third party laboratory for monitoring fugitive emissions. These reports are being reproduced during inspection by APPCB and CPCB officials. In future, the same shall be submitted along with six monthly compliance reports as recommended by the Joint Committee in its Report. It is submitted that the reports are maintained regularly, which is in compliance with CFO/EC conditions.
8	Green belt shall be provided to mitigate the effects of fugitive emissions all around the plant in a minimum of 33% of the plant area in consultation with DFO as per CPCB guidelines.	Partially Complied It is required to develop thick green belt to mitigate the effects of fugitive emissions all around the plant in a minimum of 33% of the plant area in consultation with DFO as per CPCB guidelines.	It is submitted that refinery operation requires large area and hence, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB". It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was


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	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			<p>completed in the year 2016 as recommended in VRMP CFE. Above plantation measures provide a green cover more than the green belt requirement. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernisation project).</p> <p>This implies that HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acres of Plantation, and is complying with the CFE condition. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by APPCB in action taken report dated 10.11.2021.</p>
10	The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989, as amended in 2000 and the Public Liability Insurance Act for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commissioning of the expansion project. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	<p>Partially Complied</p> <p>It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.</p>	Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
	General Conditions:		
1	The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control	<p>Partially Complied</p> <p>It is required to strictly adhere to the stipulations made by the Andhra Pradesh</p>	This is a general observation by the Joint Committee, and every operation is being conducted as per the CFO conditions.


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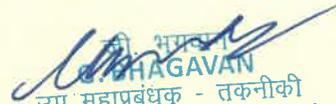
	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
	Board (SPCB) and the State Government.	Pollution Control Board (APPCB), State Government and any other statutory authority.	Refinery is complying with the conditions stipulated in CFO No:APPCB/VSP/VSP/72/CFO/HO/2021 dated 09.03.2021 and task force directives issued by APPCB vide letter no.702/APPCB/UH-II/TF/VSP/2020 dated 19.03.2020. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
2	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Partially Complied It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.	At the outset and without prejudice to the other contentions in this respect, it submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore, it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/ permitted for capacity expansion. The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below: Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.

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	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			<p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA</p> <p>New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p> <p>In any event, it is submitted that the condition has been complied with by HPCL-VR.</p> <p>Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery, it can be seen that there has been</p>


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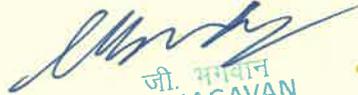
	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			proper approvals and permissions from the concerned authorities.
3	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and as amended from time to time. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. shall be obtained. All Transportation of Hazardous Chemicals shall be as per the MVA, 1989.	Partially Complied It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.	Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
6	Proper House Keeping and adequate occupational health programs shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for at least 10 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.	Partially Complied	It is submitted that the observation of the Joint Committee is mistaken, since on perusal of the contents, it is clear that the Joint Committee has found HPCL-VR is compliant with the EC condition. It is further submitted that Regular health check-ups of all the employees in the refinery are being carried out and the records are maintained in the Occupational Health Centre.
10	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Partially Complied It is required to provide the detailed report on expenditure incurred for environment pollution control measures to implement the conditions stipulated by the Ministry as well as the State Government along with the implementation schedule for all the conditions stipulated herein for last three years.	EC condition specifies adequate funds to be made available for complying with the conditions stipulated by MoEF and APPCB. The expenditure incurred towards environmental pollution control measures is being provided in Environment Statement (Form-V) every year to APPCB. The same was submitted to Joint committee during inspection. Hence, the requirement was complied with.


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	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
11	The project proponent shall have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education of health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs. CSR activities will be undertaken by involving local villages and administration.	Partially Complied It is required to provide the detailed report regarding the scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education of health centres, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs along with expenditure incurred for last three years.	Various developmental activities such as construction of toilet blocks, supply of furniture, supply of computers, scholarships to students, health camps, supply of diagnostic machines, etc., are taken up in schools & hospitals in the region under Corporate Social Responsibility (CSR) program. The details were submitted to the Joint Committee during inspection. Hence, the requirement was complied with.
12	The implementation of the project vis-a-vis environmental action plans shall be monitored by concerned Regional Office of the Ministry/States Pollution Control Boards/Central Pollution Control Board. A six monthly compliance status report shall be submitted to monitoring agencies and displayed on the Website of the Company.	Partially Complied It is required to submit the compliance status of conditions stipulated in all EC's along with monitored data of air, water, noise, etc., on six monthly basis to Integrated Regional Office, MoEFCC, Vijayawada by email. It is also required to upload the six monthly compliance reports of all the EC's granted to the project along with the monitored reports in the company's website.	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.
13	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in . This should be	Partially Complied It is required to provide the copies of newspaper advertisement regarding grant of EC dated 07.03.2008.	This condition has been complied with fully.


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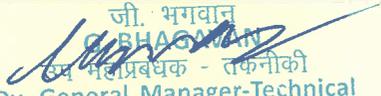
	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
	advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry.		
14	The date of Financial Closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project will be informed to the Ministry and its Regional Office.	Partially Complied It is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	It is submitted that for every project, the financial closure and final approval of the project is obtained. The records are available and shall be provided as per requirement.


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	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
			proper approvals and permissions from the concerned authorities.
3	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and as amended from time to time. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. shall be obtained. All Transportation of Hazardous Chemicals shall be as per the MVA, 1989.	Partially Complied It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.	Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
6	Proper House Keeping and adequate occupational health programs shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for at least 10 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.	Partially Complied	It is submitted that the observation of the Joint Committee is mistaken, since on perusal of the contents, it is clear that the Joint Committee has found HPCL-VR is compliant with the EC condition. It is further submitted that Regular health check-ups of all the employees in the refinery are being carried out and the records are maintained in the Occupational Health Centre.
10	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Partially Complied It is required to provide the detailed report on expenditure incurred for environment pollution control measures to implement the conditions stipulated by the Ministry as well as the State Government along with the implementation schedule for all the conditions stipulated herein for last three years.	EC condition specifies adequate funds to be made available for complying with the conditions stipulated by MoEF and APPCB. The expenditure incurred towards environmental pollution control measures is being provided in Environment Statement (Form-V) every year to APPCB. The same was submitted to Joint committee during inspection. Hence, the requirement was complied with.


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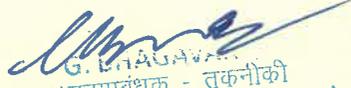
	EC Conditions	Joint Committee Observation	Reply by HPCL-VR
11	The project proponent shall have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education of health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs. CSR activities will be undertaken by involving local villages and administration.	Partially Complied It is required to provide the detailed report regarding the scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education of health centres, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs along with expenditure incurred for last three years.	Various developmental activities such as construction of toilet blocks, supply of furniture, supply of computers, scholarships to students, health camps, supply of diagnostic machines, etc., are taken up in schools & hospitals in the region under Corporate Social Responsibility (CSR) program. The details were submitted to the Joint Committee during inspection. Hence, the requirement was complied with.
12	The implementation of the project vis-a-vis environmental action plans shall be monitored by concerned Regional Office of the Ministry/States Pollution Control Boards/Central Pollution Control Board. A six monthly compliance status report shall be submitted to monitoring agencies and displayed on the Website of the Company.	Partially Complied It is required to submit the compliance status of conditions stipulated in all EC's along with monitored data of air, water, noise, etc., on six monthly basis to Integrated Regional Office, MoEFCC, Vijayawada by email. It is also required to upload the six monthly compliance reports of all the EC's granted to the project along with the monitored reports in the company's website.	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.
13	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in . This should be	Partially Complied It is required to provide the copies of newspaper advertisement regarding grant of EC dated 07.03.2008.	This condition has been complied with fully.


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Compliance to DHT EC J-11011/408/2009-IA II (I) dated 02.09.2009

In this submission, only the EC Conditions wherein the joint committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC conditions.

S.No	EC Conditions	Joint Committee Observation	Compliance by HPCL-VR
	A. Special Conditions:		
1	M/s HPCL shall comply with the stipulations made in the environmental clearance accorded vide Ministry's vide letter No. J-11013/55/2003-IA II (I), dated February 03, 2004 for Clean Fuels Project and expansion from 7.5 to 10.0 MMTPA	Partially Complied It is required to submit the status of compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11013/55/2003-IA II (I) dated 3rd February, 2004 on six monthly basis to Ministry's Integrated Regional Office, Vijayawada.	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.
2	M/s HPCL shall comply with new standards/ norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March 2008.	Partially Complied It is required to comply all new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008. It requires immediate action.	HPCL-Visakh Refinery is complying with the new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18.03.2008. The compliance is complete as of date and ongoing. Hence, the observation of the Joint Committee is erroneous.
4	The company shall undertake measures for control of dust emission during construction and traffic congestion	Partially Complied It is required to take adequate measures to control the PM10, PM2.5 and SO2 in the ambient air of the project surroundings. It requires immediate action.	Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. were taken up regularly to control dust emissions. The project civil jobs are nearing completion.


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S.No	EC Conditions	Joint Committee Observation	Compliance by HPCL-VR
			<p>However, it is observed that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station placed during the inspection at North west corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. However, the 24hr Average SO₂ value recorded in the Store Yard CAAMS station near the same location (approx. 100 meters away) was within the prescribed limit..</p>
5	Efforts shall be made to use gas as a fuel in the furnaces to the maximum extent possible	<p>Partially Complied It is required to make efforts to use gas as a fuel in the furnaces to the maximum extent possible.</p>	Fuel gas distribution system has been designed to achieve this objective and strict operational instructions are in place to maximize fuel gas consumption. Hence, HPCL-VR is using gas as a fuel in the


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 H.P.C.L - Visakh Refinery

S.No	EC Conditions	Joint Committee Observation	Compliance by HPCL-VR
			furnaces to the maximum extent possible in compliance with the EC condition.
6	The process emissions (SO ₂ , NO _x , HC, VOCs and Benzene) from various units shall conform to the standards prescribed by the AP State Pollution Control Board from time to time. At no time, the emission levels should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved	<p>Partially Complied</p> <p>It is required to monitor process emissions viz., SO₂, NO_x, HC (methane & Non-methane), VOCs and Benzene from various units and monitoring reports to be submitted along with six monthly compliance reports on regular basis.</p>	<p>It is submitted that the condition has been complied with by HPCL-VR:</p> <p>Monitoring of SO₂, NO_x, CO, PM, HC, VOCs and Benzene is being done regularly in refinery premises. Online connectivity of stack emissions analyzers is established with CPCB and APPCB servers. Further, stack emission monitoring is being carried out by MoEF recognized laboratory on monthly basis.</p> <p>VOCs and Benzene within refinery premises are being monitored periodically and controlled as part of LDAR survey carried out by MoEF recognized third party.</p>
7	Ambient air quality monitoring stations, (SPM, SO ₂ , NON, H ₂ S, Mercaptan, NMHC and Benzene) should be set up in the Refinery complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment should be installed for measurement of SO ₂ , NO, CO and CO ₂ . Low NO _x burners should be installed with online analyzers	<p>Partially Complied</p> <p>It is required to monitor H₂S, mercaptans, non-methane-HC and Benzene at all AAQ monitoring stations. It is required to take appropriate measures to control the PM₁₀, PM_{2.5} and SO₂ emissions in the project area.</p>	<p>H₂S, Mercaptan and non-methane analyzers are available at all the 3 CAAM stations.</p> <p>Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. were taken up regularly to control dust emissions. The project civil jobs are nearing completion.</p> <p>However, it is observed that PM₁₀ & PM_{2.5} values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60</p>


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			<p>µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>It may please be noted that SO₂ value recorded (84 µg/m³) in the Mobile station placed during the inspection at North west corner of the industry near ETP-4 was slightly above the maximum prescribed limit of 80 µg/m³. However, the 24hr Average SO₂ value recorded in the Store Yard CAAMS station near the same location (approx. 100 meters away) was within the prescribed limit.</p>
8	The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant namely;	<p>Partially Complied</p> <p>It is required to submit the compliance status of environmental conditions stipulated in the environmental clearance letter no. J-11011/22/94-A II (I) dated 30th May, 1995, F. No. J-11011/88/96-IA II(I) dated 10th April, 1997,</p>	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.


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	<p>SPM, RSPM, SO, NO_x (Ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at the convenient location near the main gate of the Company in the public domain</p>	<p>J-11013/55/2003-IA II (I) dated 3rd February, 2004 and J-11011/66/2007-1A II (I) dated 7th March, 2008 and J-1 1011/408/2009-IA II (I) dated 2nd September, 2009 along with all environmental monitored data on six monthly basis to Ministry's Integrated Regional Office, Vijayawada. The same should be uploaded on company's website.</p> <p>It is required to display the criteria pollutant levels namely; PM10, PM2.5, SO_x, NO_x, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects main gate of the project. It requires immediate action.</p>	<p>The criteria pollutant levels (PM10, PM2.5, NO_x, HC, VOCs, etc) are written and updated regularly on display boards installed at the Refinery gate.</p> <p>The old display board was not functioning properly, which was to be replaced with a new LED display board. However, at all times manual board was always available displaying relevant parameters.</p> <p>New LED display board for display of various environmental parameters like stack emissions, ambient air quality and liquid effluent quality was installed which was under commissioning during the Joint Committee visit. The same was commissioned by end of March 2021. The photos of the same are enclosed in Attachment-VII.</p>


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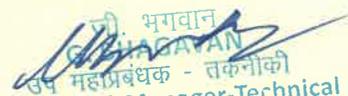
S.No	EC Conditions	Joint Committee Observation	Compliance by HPCL-VR
9	Monitoring of fugitive emissions should be carried out as per the guidelines of CPCB by fugitive emission detectors and reports should be submitted to the Ministry's Regional Office at Bangalore. For control of fugitive emission all unsaturated hydrocarbon will be routed to the flare system and the flare system should be designed for smoke less burning	<p>Partially Complied</p> <p>It is required to monitor the fugitive emissions as per the guidelines of CPCB and the monitoring reports to be submitted along with six monthly compliance reports on regular basis.</p>	<p>It is submitted that HPCL-VR has complied with the condition. The EC condition only requires adoption of necessary measures to minimize fugitive emission, and there is no condition stating that reports need to be submitted to any authority. However, it is submitted that Leak Detection and Repair (LDAR) survey is being carried out regularly by MoEF recognized third party laboratory for monitoring fugitive emissions. These reports are being reproduced during inspection by APPCB and CPCB officials. In future, the same shall be submitted along with six monthly compliance reports as recommended by the Joint Committee in its Report.</p> <p>It is to be noted that hydrocarbons are being routed to flare system as per the EC condition.</p>
10	Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage should also be provided at strategic locations. The company should use low sulphur fuel to minimize SO2 emission. Sulphur recovery units should have efficiency of 99.5 %. Leak Detection and Repair programme should be implemented to control HC/VOC emissions. Work zone monitoring should be carried out near the storage tanks	<p>Partially Complied</p> <p>It is required to submit the monitoring reports of fugitive emissions of HC from the product storage tank yards work zone near the storage tanks besides monitoring of HCs/VOCs in the work zone along with six monthly compliance reports on regular basis.</p>	<p>It is submitted that HPCL-VR has complied with the condition. The EC condition only requires adoption of necessary measures to minimize fugitive emission, and there is no condition stating that reports need to be submitted to any authority. However, it is submitted that Leak Detection and Repair (LDAR) survey is being carried out regularly by MoEF recognized third party laboratory for monitoring fugitive emissions. These reports are being reproduced during inspection by APPCB and CPCB officials. In future, the same shall be submitted along</p>


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	besides monitoring of HCs/VOCs in the work zone		<p>with six monthly compliance reports as recommended by the Joint Committee in its Report.</p> <p>It is submitted that the reports are maintained regularly, which is in compliance with CFO/EC conditions.</p>
11	The waste water should be treated in the waste water treatment plant and the treated effluent should meet the prescribed standards. Efforts should be made to recycle the treated effluent to achieve zero discharge	<p>Partially Complied</p> <p>It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate measures.</p> <p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p>	<p>HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details</p>


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		It is required to make efforts to recycle the treated effluent to achieve zero discharge and the treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.	and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards. Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water. A new Integrated Effluent Treatment Plant (IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully. Hence, it is submitted that HPCL-VR is complying with this condition.
14	The Company should take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums should be installed to minimize gaseous emissions during flaring	Partially Complied It is required to provide detailed report on causes of fire, equipment/detector failure, fire control measures taken, workers present at the location during incident and their present status to be provided.	All the facilities are designed in line with OISD (Oil Industry Safety Directorate) standards. Necessary infrastructure is in place to effectively handle any emergency. With regard to observation by joint committee, all the details of the fire incident were submitted to joint committee. Thus, the EC condition is complied with.
15	To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material should be in place		
18	Greenbelt should be developed to mitigate the effect of fugitive emission	Partially Complied	


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	all around the plant in a minimum 33% plant area in consultation with DFO as per CPCB guidelines	It is required to develop thick green belt with suitable species as per CPCB guidelines.	<p>It is submitted that refinery operation requires large area and hence, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB".</p> <p>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE. Above plantation measures provide a green cover more than the green belt requirement. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernisation project).</p> <p>This implies that HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation, and is complying with the CFE condition. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by</p>


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	all around the plant in a minimum 33% plant area in consultation with DFO as per CPCB guidelines	It is required to develop thick green belt with suitable species as per CPCB guidelines.	<p>It is submitted that refinery operation requires large area and hence, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB".</p> <p>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE. Above plantation measures provide a green cover more than the green belt requirement. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernisation project).</p> <p>This implies that HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation, and is complying with the CFE condition. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by</p>


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			APPCB in action taken report dated 10.11.2021.
	B. GENERAL CONDITIONS		
15	The project authorities must-strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government and any other statutory body	Partially Complied It is required to strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board (APPCB), State Government and any other Statutory authority.	This is a general observation by the Joint Committee, and every operation is being conducted as per the CFO conditions. Refinery is complying with the conditions stipulated in CFO No:APPCB/VSP/VSP/72/CFO/HO/2021 dated 09.03.2021 and task force directives issued by APPCB vide letter no.702/APPCB/UH-II/TF/VSP/2020 dated 19.03.2020. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
16	No further expansion or modification in the project shall be carried without prior approval of the Ministry of Environment and Forests. In case of deviations or alternations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry	Partially Complied It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.	At the outset and without prejudice to the other contentions in this respect, it submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore, it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/ permitted for capacity expansion. The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below: Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has


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			<p>been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (will be decommissioned) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA</p> <p>New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15 MMTPA.</p> <p>In any event, it is submitted that the condition has been complied with by HPCL-VR.</p>


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			Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery it can be seen that there has been proper approvals and permissions from the concerned authorities.
17	The Project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals from chief inspectorate of factories, chief controller of explosives, fire safety inspectorate etc., must be obtained, wherever applicable.	Partially Complied It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.	Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
18	Waste water shall be properly collected and treated so as to conform to the standards prescribed under EP Act & Rules and mentioned in the Consents provided by the relevant SPCB	Partially Complied It has been observed that the water consumption for boiler feed water was exceeded the permitted quantity as per CFO. It is required to take appropriate measures.	HPCL-VR receives fresh water from 3 sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.


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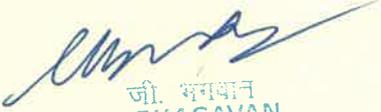
S.No	EC Conditions	Joint Committee Observation	Compliance by HPCL-VR
		<p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen and exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p>	<p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>Hence, it is submitted that HPCL-VR is complying with this condition.</p>
20	<p>The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project, if required. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented</p>	<p>Partially Complied It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.</p>	<p>Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.</p>
21	<p>The project authorities will provide adequate funds as non-recurring and recurring expenditure to implement the</p>	<p>Partially Complied It is required to provide the detailed report on expenditure incurred for environment</p>	<p>EC condition specifies adequate funds to be made available for complying with the</p>


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	conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes	pollution control measures to implement the conditions stipulated by the Ministry as well as the State Government along with the implementation schedule for all the conditions stipulated herein for last three years.	conditions stipulated by MoEF and APPCB. The expenditure incurred towards environmental pollution control measures is being provided in Environment Statement (Form-V) every year to APPCB. The same was submitted to Joint committee during inspection. Hence, the requirement was complied with.
23	The stipulated conditions will be monitored by the concerned Regional Office of this Ministry / Central Pollution Control Board! State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly. It will also be displayed on the Website of the Company	<p>Partially Complied</p> <p>It is required to submit the compliance status of conditions stipulated in all ECs along with monitored data of air, water, noise, etc., on six monthly basis to Integrated Regional Office, MoEFCC, Vijayawada by email.</p> <p>It is required to upload the six monthly compliance reports of all the EC's granted to the project along with the monitored reports in the company's website.</p>	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.
24	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both on hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB		
25	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations if any, were received while processing the proposal.	<p>Partially Complied</p> <p>It is required to upload the copy of environmental clearance dated 02.09.2009 and the six monthly compliance reports along with all monitored data in the company's website and regularly updated the same. It requires immediate action.</p>	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website.


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	The clearance letter shall also put up on the website of the Company by the proponent		
27	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also be put on the website of the Company alongwith the status of compliance of EC conditions and shall also be sent to the respective regional Office of the MoEF by e-mail	Partially Complied It is required to upload the environmental statement for each financial year ending 31 st March in Form-V on company's website and regularly be updated. It requires immediate action.	The latest Environmental statement (Form-V) for 2020-21 submitted to APPCB vide letter dated 16.09.2021 is updated on HPCL's corporate website.
29	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project	Not Complied It is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	It is submitted that for every project, the financial closure and final approval of the project is obtained. The records are available and shall be provided as per requirement.


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Compliance to EC No.J-11011/63/2013-IA-II (I) dated 11.02.2016

At the outset, it is submitted that the EC dated 11.02.2016 is with respect to the Visakh Refinery Modernization Project (VRMP) which is an ongoing project. The conditions provided in the EC are to be complied with when the project is completed and ready for commissioning. Hence, this Respondent has undertaken the necessary steps and it can be seen from the report of the Joint Committee that majority of the conditions of the EC are complied with by this Respondent and some of them are ongoing i.e. the compliance is being undertaken and will be in place at the time of using the facilities under VRMP. Hence, it is humbly submitted that all the observations of the Joint Committee stating 'Partially Complied' and 'Not Complied' are not to be considered as the compliance status can be checked only after the completion and commissioning of VRMP.

Without prejudice to the aforesaid, in this submission, only the EC Conditions wherein the joint committee has observed that the status is 'Partially Complied' or 'Not Complied' are being responded to, along with necessary submissions to show that HPCL-VR is fully compliant with EC condition.

A. SPECIFIC CONDIITONS			
S.No.	Particulars	Joint Committee Observation	Reply by HPCL-VR
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/22/94-1A 11(1) dated 30 th May, 1995, F. No. J-11011/88/96-IA 11 (1) dated 10 th April, 1997, J11013/55/2003- IA 11 (I) dated 3 rd February, 2004 and J-11011/66/2007-IA 11 (I) dated 7 th March, 2008 and J-11011/408/2009-IA 11 (1) dated 2 nd September, 2009 shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office at Chennai.	<p>Partially Complied</p> <p>It is required to submit the compliance status of environmental conditions stipulated in the environmental clearance letter no. J-11011/22/94-A II (I) dated 30th May, 1995,</p> <p>F. No. J-11011/88/96-IA II(I) dated 10th April, 1997,</p> <p>J-11013/55/2003-IA II (I) dated 3rd February, 2004 and</p> <p>J-11011/66/2007-IA II (I) dated 7th March,2008 and</p>	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been uploaded on HPCL's corporate website.

		J-1 1011/408/2009-IA II (I) dated 2nd September, 2009 along with all environmental monitored data on six monthly basis to Ministry's Integrated Regional Office, Vijayawada. The same should be uploaded on company's website.	
ii.	M/s HPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008	Partially Complied It is required to comply all standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R.186 (E) dated 18 th March 2008. It requires immediate action.	HPCL-Visakh Refinery is complying with the new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18.03.2008. The compliance is complete as of date and ongoing. Hence, the observation of the Joint Committee is erroneous.
iii.	Continuous on-line stack monitoring for SO ₂ , NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	Partially Complied It has been observed that, as per CFO, there were 35 stacks were present in the project. However, continuous online stack monitoring facilities were provided for 32 stacks only. It is required to provide the same for rest of three stacks also.	It is submitted that HPCL-VR has complied with this condition. It is to be noted that the following 3 stacks attached to 1. PP-I utility boiler (WIL-8) 2. CPP HRSG-I 3. CPP HRSG-II are non-operational for past few years since these are no more required for operation of the Refinery and accordingly planned for dismantling. Hence, the continuous on-line stack monitoring facilities and their connectivity are not provided for these 3 stacks.
iv.	The process emissions [SO ₂ , NO _x , HC (Methane & Non-methane)], VOCs and Benzene from various units shall conform to the standards prescribed under the	Partially Complied It is required to monitor process emissions viz., SO ₂ , NO _x , HC, VOCs and Benzene	It is submitted that the condition has been complied with by HPCL-VR. Monitoring of SO ₂ , NO _x , CO, PM, HC, VOCs and Benzene is being done regularly in refinery

	Environment (Protection) Act. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	from various units and monitoring reports to be submitted along with six monthly compliance reports on regular basis.	premises. Online connectivity of stack emissions analyzers is established with CPCB and APPCB servers. Further, stack emission monitoring is being carried out by MoEF recognized laboratory on monthly basis. VOCs and Benzene within refinery premises are being monitored periodically and controlled as part of LDAR survey carried out by MoEF recognized third party.
vii.	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Partially Complied It is required to submit the monthly Sulphur balance sheet of the refinery along with six monthly compliance report on regular basis to Integrated Regional Office (IRO), Vijayawada.	It is submitted on bare perusal of the observations in the Joint Committee Report, it can be seen that emission of SO ₂ is effectively managed and it is within the parameters set-out in the CFO. Sulphur balance of the refinery is being submitted to APPCB on monthly basis. The same will be submitted to MoEF office along with six monthly compliance reports.
viii.	Ambient air quality monitoring stations, [PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , H ₂ S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs and trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the	Partially Complied It is required to monitor H ₂ S, mercaptan and non-methane-HC at all AAQ monitoring stations. It is required to take appropriate measures to control the PM ₁₀ , PM _{2.5} and SO ₂ emissions in the project area. It is required to take adequate measures to control the PM ₁₀ , PM _{2.5} and SO ₂ in the ambient air of the project surroundings. It requires immediate action.	At the outset, it may be noted that EC condition requires consultation with APPCB, and not Maharashtra Pollution Control Board as stated in the Report. H ₂ S, Mercaptan and non-methane analyzers are available at all the 3 CAAM stations. Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of

<p>exceed 873 m³/hr after expansion and prior permission shall be obtained from the competent authority. Industrial effluent generation will be 902 m³/hr and treated in the new state-of-the-art Integrated Effluent Treatment Plant (IETP). Treated effluent shall be fully reused/recycled as make-up water for raw water cooling towers. Domestic sewage shall be treated in sewage treatment plant (STP).</p>	<p>consumption for boiler feed water was exceeded the permitted quantity as per CFO.</p> <p>It has been observed that the values of TSS, BOD and Ammonical Nitrogen are exceeding the stipulated standards for the sample collected from ETP-IV ACF outlet. It is required to take adequate measures to control the above pollutants in the effluents.</p> <p>It is required to make efforts to recycle the treated effluent to achieve zero discharge and the treated effluent should be fully reused/recycled as make-up water for raw water cooling towers.</p>	<p>sources of reservoirs supplied by Municipal Corporation and there is no other source of fresh water for consumption in the Refinery. This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water. Though boiler feed water consumption slightly exceeded the limit mentioned in the CFO, the total fresh water consumption remained within the limit. The total quantity of fresh water (excluding sea-cooling water) consumption of 17700 KLD is below the CFO stipulated limit of 19488 KLD.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water.</p> <p>A new Integrated Effluent Treatment Plant</p>
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			(IETP) is being implemented under current refinery expansion project (VRMP). Post implementation of this IETP, the treated water will be recycled/reused fully. Hence, it is submitted that HPCL-VR is complying with this condition.
xi.	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.	Partially Complied It is required to submit the comprehensive water audit reports to Integrated Regional Office, Vijayawada on annual basis.	Water consumption details were submitted to APPCB. Water audit report is under preparation and shall be submitted after finalization of the report.
xii.	Automatic/online monitoring system (24x7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB, Regional Office of MoEF&CC and in the Company's website.	Partially Complied It is required to monitor total flow rate of effluent being discharged outside of the project and all the monitoring data should be uploaded in company's website.	Online connectivity of liquid effluent flow rate and analyzers is being provided with CPCB and APPCB servers as per EC condition in the project.
xiii.	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Partially Complied It is required to provide state-of-art/API oil separation system for collection of oil and grease from storm water drainage inside the factory premises.	API separators/Oil catchers are available in the existing refinery for storm water drains. Further, Oil Catchers/Separator are being planned to construct under VRMP are as follows and will be implemented before commissioning of the project facilities: 1) Oil Catcher at West side of Syphon area. 2) Oil Catcher at East side of Syphon area. 3) Oil Catcher at East of RUF area. 4) Oil Catcher at South West corner of

			ATP area. 5) Oil Separator at South East corner of Old BOT area
xiv.	Oily sludge shall be disposed off into Coker. Annual Oily sludge generation and disposal data shall be submitted to the Ministry's Regional Office and CPCB.	Not Complied It is required to dispose off oily sludge into coker. The annual oily sludge generation and disposal data to be submitted to Integrated Regional Office, Vijayawada on regular basis.	Coker Unit is not considered in expansion and also not installed in existing refinery. Oily sludge is being disposed of as per the PCB guidelines and the details of annual sludge generation and disposal are submitted to APPCB. The same information shall be provided to MoEF Integrated Regional Office also. Hence, it is submitted that HPCL-VR is complying with this condition.
xvi.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal. Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	Partially Complied It is required to obtain membership of common TSDF for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Integrated Regional Office, Vijayawada.	Membership of common TSDF is available for HPCL-Visakh refinery. The hazardous waste is being sent to CPCB authorized TSDF site namely Coastal Waste Management Project located at Parawada, Vishakhapatnam. Copy of the membership of TSDF shall be submitted to MoEF Integrated Regional Office as recommended now by the Joint Committee Report. Hence, HPCL-VR is in compliance with the EC condition.
xvii.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Partially Complied It is required to provide the detailed report regarding the oil spillage prevention management plan and monitoring of spillage of oil/ petroleum products for last three years.	Oil spill prevention and management plan is covered under ERDMP manual. This data was not sought by the committee during inspection. Hence, the condition is complied with.

xx.	The company should make the arrangement for protection of possible fire and explosion hazards during construction and operation phase. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	<p>Partially Complied</p> <p>It is required to provide detailed report on causes of fire, equipment/detector failure, fire control measures taken, workers present at the location during incident and their present status to be provided.</p>	<p>All the facilities are designed in line with OISD (Oil Industry Safety Directorate) standards. Necessary infrastructure is in place to effectively handle any emergency.</p> <p>With regard to observation by joint committee, all the details of the fire incident were submitted to joint committee. Thus, the EC condition is complied with.</p>
xxii.	All issues raised during public hearing/consultation shall be satisfactorily implemented and adequate budget provision should be made accordingly.	<p>Partially Complied</p> <p>It is required to provide detailed compliance status of all issues raised during public hearing/consultation and details of budget provisions made.</p>	HPCL-VR is in compliance with this condition and the same is ensured. Budget Provisions made for Rs 60 Cr and are being implemented.
xxiii.	Thick greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.	<p>Partially Complied</p> <p>It is required to develop thick green belt with suitable species as per the CPCB guidelines.</p>	<p>As part of expansion project, thick green belt is being developed in the vicinity of refinery.</p> <p>It is submitted that refinery operation requires large area and hence, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under "Green Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondent's Visakh Refinery as per the directives of APPCB".</p> <p>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of "Green Visakha" program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE. Above</p>

			<p>plantation measures provide a green cover more than the green belt requirement. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernization project).</p> <p>This implies that HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation, and is complying with the CFE condition. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by APPCB in action taken report dated 10.11.2021.</p>
xxv.	<p>As proposed, Rs. 60 Crore shall be earmarked towards the Enterprise social responsibility based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Chennai. Implementation of such program shall be ensured accordingly in a time bound manner.</p>	<p>Partially Complied</p> <p>It is required to earmark Rs. 60 Crore towards the Enterprise social responsibility based on Public Hearing issues and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's Integrated Regional Office at Vijayawada. Implementation of such program should be ensured accordingly in a time bound manner.</p>	<p>Being complied with. Some of the major Enterprise Social Responsibility (ESR) activities carried out are given below:</p> <ul style="list-style-type: none"> • Construction of Malkapuram Drain, Visakhapatnam. • Purchase of 10 Nos "108 Ambulance" Vehicles for saving lives of Citizens. • Providing 3 Nos container Toilet Blocks and one unit of Toilet block i.e. Four Urinals and Two Toilet blocks to GVMC, Visakhapatnam • Arranging Road Stoppers and No Parking Boards to Police Dept. for placing them from Scindhia to Sriharipuram. • Release of funds to district Collector (For purchase of critical care equipment, drugs etc for saving lives of citizens). • Release of funds to GVMC

			<p>commissioner (For distribution of 13,250 nos. food provision kits to migrant and poor community in the vicinity of Visakh refinery.</p> <ul style="list-style-type: none"> Procurement of Push Carts, House Hold Dustbins 10lts (Small), Pet Bottles Crushing Machines and Try Bins (Wet, Dry Hazardous Waste) being carried out by Greater Visakhapatnam Municipal Corporation (GVMC) under "Swachh Bharat Mission – 2020" <p>More activities will be taken up.</p>
B. GENERAL CONDITIONS:			
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.	<p>Partially Complied</p> <p>It is required to strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board (APPCB), State Government and any other Statutory authority.</p>	This is a general observation by the Joint Committee, and every operation is being conducted as per the CFO conditions. Refinery is complying with the conditions stipulated in CFO No:APPCB/VSP/VSP/72/CFO/HO/2021 dated 09.03.2021 and task force directives issued by APPCB vide letter no.702/APPCB/UH-II/TF/VSP/2020 dated 19.03.2020. The compliance status of APPCB task force directives is elaborated in Attachment –III.
ii.	No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional	<p>Partially Complied</p> <p>It is required to provide detailed explanation regarding expansion of project from 7.5 MMTPA to 8.33 MMTPA along with the approval obtained from Ministry, if any.</p>	At the outset and without prejudice to the other contentions in this respect, it is submitted that the observation of Joint Committee has no relevance since EC was provided from 7.5 MMTPA to 10.0 MMTPA, and then till 15 MMTPA. Therefore it can be seen that HPCL-VR has always existed within the maximum parameters prescribed/permitted for

<p>environmental protection measures required, if any.</p>		<p>capacity expansion.</p> <p>The clarification on capacity expansion of Refinery from 8.33 MMTPA to 15.0 MMTPA under VRMP is provided below:</p> <p>Under VRCFP Project, EC No.J-11013/55/2003-IA II(I) dt. 03-02-2004 has been provided for Crude processing capacity expansion from 7.5 MMTPA to 10 MMTPA utilizing existing unit's spare capacity and revamping of units.</p> <p>The name plate / operating capacity of existing Crude distillation units is only 8.33 MMTPA after using spare capacity which is within the limits of EC approval of 10.0 MMTPA.</p> <p>Under VRMP, a new CDU of 9.0 MMTPA is considered in lieu of one of the existing low capacity old CDU. Therefore, post VRMP, Refinery will be operating three CDUs as below:</p> <p>Existing CDUs: CDU-I-0.0 MMTPA (decommission) CDU-II- 3.0 MMTPA CDU-III- 3.0 MMTPA</p> <p>New CDU: CDU-IV- 9.0 MMTPA</p> <p>Accordingly, EC was obtained for capacity expansion from 8.33 MMTPA to 15</p>
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			MMTPA. In any event, it is submitted that the condition has been complied with by HPCL-VR. Hence, there is no lack of compliance by HPCL-VR. For all the expansions of the refinery, it can be seen that there has been proper approvals and permissions from the concerned authorities.
iii.	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.	Partially Complied It is required to provide the copies of approvals taken from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc., wherever applicable.	Necessary approvals from Chief Inspector of Factories and Chief Controller of Explosives etc., are in place and copies of the same are reproduced during inspections by statutory agencies. Hence, the observation of Joint Committee that there is only partial compliance is erroneous.
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.	Partially Complied It is required to provide detailed report on expenditure incurred for environment pollution control measures to implement the conditions stipulated by the ministry as well as state government along with the implementation schedule for all the conditions stipulated herein for last three years.	EC condition specifies adequate funds to be made available for complying with the conditions stipulated by MoEF and APPCB. The expenditure incurred towards environmental pollution control measures is being provided in Environment Statement (Form-V) every year to APPCB. The same was submitted to Joint committee during inspection. Hence, the requirement was complied with.
vii.	The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A	Partially Complied It is required to submit the compliance status of conditions stipulated in all ECs along with	Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office. The same has been

	<p>six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.</p>	<p>monitored data of air, water, noise, etc., on six monthly basis to Integrated Regional Office, MoEFCC, Vijayawada by email.</p>	<p>uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.</p>
ix.	<p>The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, PM_{2.5}, SO₂, NO_x, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Partially Complied</p> <p>It is required to submit the compliance status of environmental conditions stipulated in the environmental clearance letter no. J-11011/22/94-A II (I) dated 30th May, 1995, F. No. J-11011/88/96-IA II(I) dated 10th April, 1997, J-11013/55/2003-IA II (I) dated 3rd February, 2004 and J-11011/66/2007-IA II (I) dated 7th March, 2008 and J-1 1011/408/2009-IA II (I) dated 2nd September, 2009 along with all environmental monitored data on six monthly basis to Ministry's Integrated Regional Office, Vijayawada. The same should be uploaded on company's website.</p> <p>it is required to display the criteria pollutant levels namely; PM₁₀, PM_{2.5}, SO_x, NO_x, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects main gate of the project. It requires immediate action.</p>	<p>Complied.</p> <p>Status of compliance to the conditions stipulated in all the ECs is being submitted to MoEF Office regularly as prescribed. The same has been uploaded on HPCL's corporate website. Current snapshot of the website is enclosed as Attachment-XII.</p> <p>The criteria pollutant levels (PM₁₀, PM_{2.5}, NO_x, HC, VOCs, etc) are written and updated regularly on display boards installed at the Refinery gate.</p>
x.	<p>The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions</p>	<p>Partially Complied</p> <p>It is required to submit the compliance status of environmental conditions stipulated in the</p>	<p>Complied.</p> <p>Status of compliance to the conditions stipulated in all the ECs is being submitted</p>

	<p>including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry I CPCB / SPCB shall monitor the stipulated conditions.</p>	<p>environmental clearance letter no. J-11011/22/94-A II (I) dated 30th May, 1995, F. No. J-11011/88/96-IA II(I) dated 10th April, 1997, J-11013/55/2003-IA II (I) dated 3rd February, 2004 and J-11011/66/2007-IA II (I) dated 7th March, 2008 and J-1 1011/408/2009-IA II (I) dated 2nd September, 2009 along with all environmental monitored data on six monthly basis to Ministry's Integrated Regional Office, Vijayawada. The same should be uploaded on company's website.</p>	<p>to MoEF Office regularly as prescribed. The same has been uploaded on HPCL's corporate website.</p>
xi.	<p>The environmental statement for each financial year ending 31' March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.</p>	<p>Partially Complied</p> <p>It is required to upload the environmental statement for each financial year ending 31st March in Form-V on company's website and regularly be updated. It requires immediate action.</p>	<p>Complied.</p> <p>The latest Environmental statement (Form-V) for 2020-21 submitted to APPCB vide letter dated 16.09.2021 is updated on HPCL's corporate website.</p>


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 Dy. General Manager-Technical
 एच.पी.सी.एल. - विशाख रिफाइनरी
 H.P.C.L - Visakh Refinery

Sl.	Consent Condition	Joint Committee Observation	HPCL Reply
			standards, air emission standards, hazardous waste quantities and validity. Therefore, this CFO condition has been complied with by this Respondent.
8	The applicant should make applications through online for renewal of Consent (under Water and Air Acts) and Authorization under H&OW (M&TM) Rules, 2016 at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board..	Partially Complied The validity of CFO was expiring on Dec 31, 2020 and the industry applied for renewal of CFO on 04.11.2020. Just 30 Days before expiry	Complied. It is a procedural requirement which is directive in nature. It can be seen that HPCL-VR has applied for renewal much before the renewal date. However, the suggestion that the Respondent should apply digitally much more in advance will be taken care during all future renewal applications.
12	The industry may explore the possibility of tapping the solar energy for their energy requirements.	Not Complied It was informed that Solar panels are planned for installation as part of expansion project	Complied. It is not a mandatory requirement. However, as advised, HPCL-VR has explored the possibility of tapping solar energy and accordingly installation of solar panels of capacity 1.105 MW is in progress as part of refinery expansion project. Hence, there is no non-compliance as alleged by the Joint Committee Report


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 H.P.C.L - Visakh Refinery

Schedule-B

Sl.	Condition	Joint Committee Observation	HPCL Reply
1	Online stack monitoring values of stacks are exceeding the Board standards. The industry shall comply with the Board standards for all the stacks, without fail.	<p>Not Complied</p> <p>A Few exceedance were observed during March 2021. The industry should take periodic calibration and maintenance of analyzers</p>	<p>Complied.</p> <p>All the refinery emissions are monitored continuously for maintaining the parameters within the stipulated limits by ensuring required design & operational controls. A few exceedances occur due to occasional malfunctioning of analyzers which are attended on priority. Further, necessary clarifications are being provided immediately, in case of any exceedance reports from APPCB.</p> <p>All the stack analyzers are calibrated once in a month on regular basis. Calibration reports were verified by the Joint committee during inspection.</p>


 जी. भगवान
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 H.P.C.L - Visakh Refinery

Sl.	Condition	Joint Committee Observation	HPCL Reply
2	Not obtained NOC from fire department. As committed, the industry shall obtain NOC from fire department by 12.03.2021 and submit a copy at concerned Regional Office, APPCB.	<p>Not Complied</p> <p>The Industry has applied for Fire NOC and Yet to receive.</p>	<p>Action taken for Compliance.</p> <p>The commitment of obtaining fire NOC was basis pending application dated: 23.05.2019. Subsequently, the application was sent back to HPCL-VR twice asking some additional information, and HPCL-VR had resubmitted the application on 13.01.2020 and 20.02.2020 respectively with necessary additional information.</p> <p>After receiving CFO, HPCL has submitted an online application for "Occupancy NOC" from AP State Disaster Response and fire services department on 26.03.2021.</p> <p>The concerned authorities visited the refinery on 03.04.2021 for issuing NOC for buildings as applicable and sought additional/new inputs. As advised by the authorities during May 2021, the inputs pertaining to new buildings under VRMP were also submitted on 07.10.2021. Subsequently, the authorities visited the refinery on 15.11.2021. Awaiting the site inspection report and subsequent approval.</p> <p>Hence, the delay in obtaining the Fire NOC is not attributable to HPCL-VR and HPCL-VR has been following the instructions and directions of the concerned authorities, which are communicated to it in piecemeal basis, to ensure that the NOC is issued expeditiously.</p>
Water Pollution:			<p>जो. भगवान G. BHAGAVAN जनरल मैनेजर - तकनीकी General Manager-Technical एच.पी.सी.एल. - विशाख रिफाइनरी H.P.C.L - Visakh Refinery</p>

Sl.	Condition	Joint Committee Observation	HPCL Reply
1	The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below. Further, the following parameters shall be complied for Process & Wash effluents at the outlets of ETP-I, II & IV i.e., before mixing with cooling waste water discharge:	<p>Not Complied</p> <p>As per the Analysis results in Table 13. The Values of TSS and Ammonical Nitrogen are exceeding the stipulated standards for sample collected from ETP-IV outlet.</p>	<p>Complied.</p> <p>Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p>

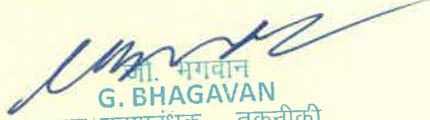

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Sl.	Condition	Joint Committee Observation	HPCL Reply																					
2	<p>The source of water is Municipal water and Sea Water. The industry shall take steps to reduce water consumption to the extent possible and consumption shall NOT exceed the quantities mentioned below:</p> <table border="1"> <thead> <tr> <th>S.No</th> <th>Purpose</th> <th>Quantity in KLD (Refinery)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Process & Washings</td> <td>10176</td> </tr> <tr> <td>2</td> <td>Boiler feed</td> <td>7272</td> </tr> <tr> <td>3</td> <td>Industrial cooling (Makeup) / Humidification / Water spraying)</td> <td>381000</td> </tr> <tr> <td>4</td> <td>Industrial water</td> <td>1560</td> </tr> <tr> <td>5</td> <td>Domestic</td> <td>480</td> </tr> <tr> <td></td> <td>Total</td> <td>4,00,488</td> </tr> </tbody> </table> <p>Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above.</p>	S.No	Purpose	Quantity in KLD (Refinery)	1	Process & Washings	10176	2	Boiler feed	7272	3	Industrial cooling (Makeup) / Humidification / Water spraying)	381000	4	Industrial water	1560	5	Domestic	480		Total	4,00,488	<p>Not Complied</p> <p>The industry has not installed flow meters for assessing the quantity of water used in each section.</p>	<p>Complied.</p> <p>HPCL-VR receives fresh water from 3 sources of reservoirs where separate flow meters are available for measurement.</p> <p>This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water.</p> <p>Flow meters are available to measure the consumption of sea cooling water used for industrial cooling (Makeup)/ Humidification / Water spraying).</p> <p>Further, the Joint Committee in Sr. No. 5.2 of the Report has observed the individual usage of water consumption in the refinery, and so it is clear that quantity of water used in each section is ascertainable.</p> <p>Hence, HPCL-VR is in compliance to CFO condition since with the available meters, each of the water quantities can be assessed.</p>
S.No	Purpose	Quantity in KLD (Refinery)																						
1	Process & Washings	10176																						
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Sl.	Condition	Joint Committee Observation	HPCL Reply
4	The industry shall comply with Standards for Oil Refineries notified by MOEF vide GSR No. 186 (E), dt.18.03.2008	<p>Not Complied</p> <p>Effluent and ambient air quality are not meeting the standards.</p>	<p>Complied.</p> <p>As stated earlier, analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards.</p> <p>As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.</p> <p>It is evident from the Joint Committee Report that all the parameters of ambient air quality monitoring are meeting the prescribed standards, except for PM10 & PM 2.5 values. PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p>

Sl.	Condition	Joint Committee Observation	HPCL Reply
5	<p>The industry shall comply with ambient air quality standards of PM (Particulate Matter size less than 10 µm) – 100 µg/m³, PM (Particulate Matter size less than 2.5 µm) – 60 µg/m³, SO₂ – 80 µg/m³, NO_x -80 µg/m³, Ammonia – 400 µg/m³, CO – 4 mg/m³, Benzene – 5 µg/m³, Benzo (a) Pyrene – 1 ng/m³, outside the factory premises at the periphery of the industry.</p> <p>Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated.18.11.2009.</p> <p>Noise levels :</p> <p>Day time (6 AM to 10 PM) – 75 dB(A)</p> <p>Night time (10 PM to 6 AM) – 70 dB(A)</p>	<p>Not Complied</p> <p>The values of PM10 and PM 2.5 values are exceeding the 24hrs. avg. standard monitored at 5 locations as shown in Table 5</p>	<p>Complied.</p> <p>Various mitigation measures like water sprinkling on the roads at project sites, higher barricades around project sites, regulating the traffic near civil works of project activities, usage of RMC (Ready Mix Concrete) material etc. are taken up regularly to control dust emissions. The project civil jobs are also nearing completion.</p> <p>However, it is observed that PM10 & PM2.5 values most of the time exceed the maximum prescribed limits of 100 µg/m³ and 60 µg/m³, respectively in the entire Vishakhapatnam city and therefore, HPCL refinery is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 & PM2.5 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Vishakhapatnam.</p>
	General		


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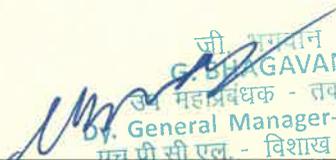
Sl.	Condition	Joint Committee Observation	HPCL Reply
9	The industry shall explore the possibility for recycling the waste water after treatment instead of discharging the waste water into Meghadrigedda surplus course during expansion.	Not Complied The entire treated water is discharged into Meghadrigedda surplus course.	Complied. Stripped sour water from process units is being recycled to the maximum possible extent with the available systems for use as wash water. The possibility for recycling the waste water after treatment was explored and the same is being implemented in Integrated Effluent Treatment Plant (IETP) as part of current expansion project (VRMP). Post Implementation of this IETP, the treated water will be recycled/reused fully.
10	The industry shall include Oil & Grease parameter in the online continuous effluent monitoring system.	Not Complied The Industry has not installed oil and grease parameters in online continuous effluent monitoring system	Action taken for Compliance. It is submitted that the committee inspected our premises on 25.03.2021 in just 2 weeks after receipt of latest CFO dated 09.03.2021. This is a new condition in this CFO, which was not there in any of the previous CFOs. Hence, this can't be considered as non-compliance. However, to give effect to the new condition, installation of online analyzers for monitoring Oil & Grease in the effluent is being implemented in the forthcoming IETP under expansion project.


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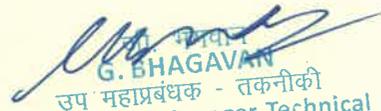
Sl.	Condition	Joint Committee Observation	HPCL Reply
11	The industry shall maintain flow meters preferably Electro Magnetic flow meters with totalizers for water and effluent quantity measurements for different streams of effluents and different categories of water usage stipulated in this order.	<p>Partially Complied</p> <p>The flow meters are installed at inlet and outlet of ETPs. However one flow meter is installed in water reservoir</p>	<p>Complied.</p> <p>HPCL-VR receives fresh water from 3 sources of reservoirs where separate flow meters are available for measurement.</p> <p>This fresh water is utilized for process & washing, Boiler Feed water, Industrial Water and Domestic water.</p> <p>Flow meters are available to measure the consumption of sea cooling water used for industrial cooling (Makeup)/ Humidification / Water spraying).</p> <p>Further, the Joint Committee in Sr. No. 5.2 of the Report has observed the individual usage of water consumption in the refinery, and so it is clear that quantity of water used in each section is ascertainable.</p> <p>The total consumption of water is properly measured and within the permitted quantity. Hence, HPCL-VR is in compliance to CFO condition since separate meters are available for assessing the quantity of water used for each of the purposes mentioned.</p>


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Sl.	Condition	Joint Committee Observation	HPCL Reply
13	Thick green belt shall be maintained all along the boundary of the industry with minimum area of 33%. Existing Green belt shall not be disturbed in the proposed expansion / construction activity.	<p>Not Complied</p> <p>The industry has planned trees on southern side, there are hardly any trees available at other three sides. There is no 33% area of green belt in industry.</p>	<p>Complied.</p> <p>It is submitted that refinery operation requires large area. For meeting the requirement of greenbelt, tree plantation on a massive scale has been carried out in various locations of Visakhapatnam under “Green Visakha” program at the instance of APPCB. It can be appreciated that the Green Visakha and Vanam Manam programs were taken up by Respondent’s Visakh Refinery as per the directives of APPCB”.</p> <p>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in the year 2015 as part of “Green Visakha” program. The balance 2,00,000 saplings plantation was completed in the year 2016 as recommended in VRMP CFE. Above plantation measures provide a green cover more than the present shortfall of green belt within the refinery. Further, Green belt is being developed in a vacant land in the vicinity of refinery under VRMP (modernization project).</p> <p>Thus it can be seen that, HPCL-VR has planted 6,50,000 plantations covering an area of approximately 700 acers of Plantation. Approximately Rs.26 crores were incurred for green belt development during 2011-2021 by HPCL-VR. The compliance of HPCL green belt condition has been confirmed as achieving 100% target by APPCB in action taken report dated 10.11.2021.</p> <p>It can be seen that all efforts are taken to increase the green cover. Hence, the finding of the Joint Committee on this aspect is not correct.</p>


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Sl.	Condition	Joint Committee Observation	HPCL Reply
16	Odour control systems shall be improved at the Merox plants and ETP areas. The industry shall not cause any odour nuisance problem.	Not Complied During inspection committee experienced strong VOC odour at all ETPs and at the guard ponds. The merox plant was not in operation and hence could not be verified.	Complied. The VOCs measured at ETPs are in the range of 8-9 ppm at grade level and localized as the readings were observed to be NIL at a distance of 1-2 meters, by same hand held instrument in presence of Joint Committee. Hence, this odour is highly localized and is not expected to reach even beyond ETP area. Merox Plant was under shutdown for maintenance activity.
19.	The stripped off VOCs / Ammonia / Mercaptans from the ETP system shall not be allowed to escape into the atmosphere.	Not Complied The industry has not installed VOC stripper in the ETP System.	Complied. APIs and TPIs in ETPs are provided with covers to minimize VOC emissions. VOC emissions are monitored periodically and controlled as part of LDAR survey. VOC recovery system in line with MoEF guidelines is being implemented in the IETP (Integrated Effluent Treatment Plant) which is envisaged in the ongoing refinery expansion project. The existing ETPs will be non-operational post IETP commissioning.


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Sl.	Condition	Joint Committee Observation	HPCL Reply
23	The industry shall maintain the drainage system properly. Storm water shall be collected and be treated before disposing into the drains.	<p>Not Complied</p> <p>The storm water drains near the ETP-II was filled with white sand like thing and near TPIs, the raw effluent was filled in drains. Near the guard pond, the storm water as filled and informed that it will be taken through tankers to ETP for treating.</p>	<p>Complied.</p> <p>Storm water is normally clean. However, in order to contain any oil presence in the storm water, API separator/oil catcher is provided to prevent any oil carryover.</p> <p>Housekeeping of the TPI area was completed. The storm water drains near the ETP-II are cleared regularly. Instead of transferring oily water through vacuum truck for reprocessing in ETP, installation of a dedicated pump in the tank (oil catcher) is taken up for implementation.</p> <p>As per the condition, HPCL-VR is maintaining proper drainage system, and all efforts are put to ensure that water/effluent is treated before disposing into drains leading out of the premises.</p>
24	The oil generation shall be prevented at the sources (process units) so that excessive oil does not reach the ETPs above the designed capacities.	<p>Not Complied</p> <p>The floating of oil was noticed in the guard pond as well as in the final outlet of I & II.</p>	<p>Complied.</p> <p>Slight oil traces observed by the committee were in a small stagnated pool of water at the inlet of guard pond. However, the same are negligible as is evident from the laboratory analysis carried out by Joint committee on the sample collected at this location (O&G value of 2 mg/L vs prescribed limit of 5 mg/L).</p> <p>Hence, HPCL-VR is in compliance with this condition.</p>


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Sl.	Condition	Joint Committee Observation	HPCL Reply
33	The industry shall comply with Task Force Directions issued by the Board from time to time.	Not Complied The directions issued by Task force on 19.03.2020 has been complied.	Complied. There appears to be an error in the observation of the Joint Committee as it has also stated that HPCL-VR is complying with the same. All task force directives issued on 19.03.2020 are complied with and compliance status was submitted to APPCB. Latest compliance status is enclosed as Attachment-III.
34	The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board: a) Daily production details (ER-1 Central Excise Returns) b) Quantity of Effluents generated, treated, recycled/reused. c) Log Books for pollution control systems. d) Sulphur content in the raw material. e) Characteristics of effluents, emissions and ambient air. f) Hazardous / non-hazardous solid waste generated and disposed g) Inspection book h) Manifest copies hazardous waste	Not Complied The industry informed that the records are maintained, but no records/logbooks were shown to committee when asked, instead the information was given in white papers sheets.	Complied. As requested by the Joint Committee during the visit, the relevant pages of the records and compiled input for some parameters taken from various records were submitted. Records/log books are being maintained. Hence, the condition for maintaining records and making them available to any inspecting authority is complied.


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Sl.	Condition	Joint Committee Observation	HPCL Reply
37	VOCs shall be monitored at vulnerable locations periodically inside the plant. The sporadic odorous emissions shall also be placed on record and necessary measures to stop reoccurrences shall be taken	<p>Not Complied</p> <p>The VOC at ETPs area and high sludge storage area is very high and the industry informed that the new integrated ETP with VOC stripper is installed to reduce the VOC at ETP area.</p>	<p>Complied.</p> <p>VOC measured at sludge lagoon ponds by hand held instrument showed 8 - 9 PPM. Few meters away from the sludge lagoon ponds, the VOC measurement done by same hand held instrument in presence of Joint committee showed Nil VOC. It was informed to Joint Committee that the VOCs are confined to local area and are not carried to other areas of the refinery.</p> <p>APIs and TPIs in ETPs are provided with covers to minimize VOC emissions. VOC emissions are monitored periodically and controlled as part of LDAR survey.</p> <p>VOC recovery system is being implemented in the IETP (Integrated Effluent Treatment Plant) which is envisaged in the ongoing refinery expansion project. The existing ETPs will be non-operational post IETP commissioning.</p> <p>Hence, there is compliance to this condition by HPCL-VR.</p>
Special Conditions: are new conditions contained in CFO Dated 09.03.2021			
48	The industry shall inventory the hazardous wastes and its quantities stored within the industry premises as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) and shall furnish the details to Regional Office, APPCB on a monthly basis duly certifying the same by the industry.	<p>Partially Complied</p>	<p>Complied.</p> <p>This is a new condition added in the current CFO. Previously, hazardous waste returns are being submitted in Form-IV every year as required in the earlier CFOs. The condition for the new CFO reducing the periodicity is being complied with and as advised, the details are being furnished on monthly basis.</p>

Sl.	Condition	Joint Committee Observation	HPCL Reply
50	The industry shall inventorize the storage quantities of hazardous chemicals (raw materials), products, as per the hazard nature of reactivity / toxicity / flammability / explosive stored / handling in the premises as defined in the Management of Storage, Import of Hazardous Chemicals (MSIHC) Rules, 1989 and the details shall be furnished to the Factories Department and to the Regional Office, APPCB on monthly basis duly certifying the same.	Not Complied	<p>Complied.</p> <p>This is a new condition added in the current CFO. It is not mentioned as to what is the apparent non-compliance to this condition. Details of hazardous chemicals (crude oil) identified as per MSIHC Rules 1989 are being submitted on monthly basis to APPCB. Copy of the records submitted to APPCB prior to & during inspection period (January 2021 to March 2021) are enclosed as Attachment-XI for reference.</p> <p>Hence, HPCL-VR is in full compliance with the condition</p>
52	VOC meters with real time data transmission facility through internet of things (IoT) shall be installed near the production blocks and near the chemical storage tanks and link to the servers of APPCB and CPCB, within 3 months.	Not Complied	<p>Action taken for compliance.</p> <p>All the gaseous vents from the units are connected to flare header. Currently, the system recommended is not existing in any of the Indian refineries.</p>
53	The industries and isolated storages that are storing hazardous chemicals less than the threshold quantities mentioned under MSIHC Rules, 1989 shall submit safety certificate to the concerned Regional Office, APPCB.	Not Complied	<p>Complied.</p> <p>This is a new condition added in the current CFO. Accordingly, HPCL-VR has engaged M/s Bureau Veritas, a specialised agency, for updating Safety report. The report includes the details of hazardous chemicals storage as per MSIHC Rules which is under finalization. The expected time of completion is March 2022.</p> <p>Hence, HPCL-VR is in substantial compliance of this condition.</p>

SCHEDULE – C

Sl.	Condition	Joint Committee Observation	HPCL Reply
5	The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.	Being Complied	
8	An application for the renewal of an authorization shall be made as laid down under these Rules.	Not Complied The validity of CFO was expiring on Dec 31, 2020 and the industry applied for renewal of CFO on 04.11.2020. Just 30 days before expiry	Complied. It is a procedural requirement which is directive in nature. It can be seen that HPCL-VR has applied for renewal much before the renewal date. However, the suggestion that the Respondent should apply digitally much more in advance will be taken care during all future renewal applications.


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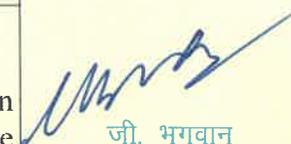
Reply of Task Force Compliance (Annexure-15)

Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
1	The industry shall carry out the study by reputed institute like IIT regarding the odour issue.	Not Complied Purchase order placed on M/s Glens Innovation Labs Pvt Ltd, Chennai. Dated 17.03.2021 for carrying out odour study at HPCL Visakha refinery. The study is expected to start in the month of April 2021.	Complied. Nationwide lockdown due to COVID-19 was declared soon after the directions of APPCB Task Force. HPCL-VR placed a purchase order on M/s Glens Innovation Labs Pvt Limited and work was to commence in April 2021. However, due to onset of COVID second wave and resultant situations of lockdown and panic created due to the same, the study couldn't be started in April 2021. After the second wave subsided, kick-off meeting for the odour study was conducted on 21.06.2021. However, due to shut-down of couple of units in the refinery, the odour study could not commence. In case odour study is conducted when units are under shutdown, study will be incomplete and will not give representative results. Hence, the odour study will be carried out once all units are functioning. The final report shall be submitted by September 2022.
2	The industry shall ensure that reduced sulphur compounds and other odorous compound emissions are within odour detection threshold.	Complied During inspection of refinery no perceptible odour of reduced Sulphur compounds (H ₂ S,	

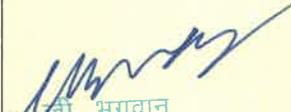
Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
		Mercaptants, Organic disulfides, etc) were observed.	
3	The industry shall carry out the Leak Detection and Repair Program (LDAR) at the specified regular intervals to identify the emission of VOCs, Volatile Hazardous Air pollutants from any leaking equipment, process equipment, etc preferably every month and the records shall be submitted to the APPCB officials during inspection	Not Complied	<p>Complied.</p> <p>It is denied that the condition/direction is not complied with by this Respondent. The Joint Committee didn't mention any reasons to arrive at their finding of non-compliance.</p> <p>Leak Detection and Repair (LDAR) survey is being carried out regularly by MoEF recognized laboratory. Survey reports are being maintained and are shared during inspection by APPCB.</p>
4	VOCs shall be monitored at vulnerable locations periodically inside the plant. The sporadic odorous emissions shall also be placed on record and necessary measures to stop reoccurrences shall be taken.	Partially Complied	<p>Complied.</p> <p>It is submitted that LDAR survey is carried out regularly as submitted above in point no. 3. VOC monitoring is part of the LDAR surveys.</p> <p>VOCs within the refinery premises at vulnerable locations are monitored periodically and controlled as part of LDAR survey.</p> <p>All the gaseous vents from the units are connected to flare header and hence, any sporadic emission will be routed to flare stack only.</p>


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Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
5	The industry shall ensure that odorous compounds in Merox unit are within odour detection threshold at minute levels.	Complied Treatment of odorous Sulphur compounds like H ₂ S, Mercaptants etc. is carried out in closed reactor system.	
6	Gas detection systems shall be in place to detect process leakages.	Complied Gas detectors are installed in process units and other locations of the refinery for timely detection of leakage of hydrocarbon and toxic gasses like H ₂ S	
7	The industry shall operate the ETP-I, ETP-II and ETP- IV continuously to ensure that the outlet of each meet the discharge standards as stipulated in the CFO. The industry shall ensure that treated process water, Treated cooling tower blow down joining the Meghadrigadda shall meet the discharge standards including the heavy metals	Not Complied The values of TSS,BOD and ammonical Nitrogen are exceeding the stipulated standards for the samples collected from ETP-IV ACF Outlet (Table 4.5) Efficiency of the ETPs to be improved	Complied. Analysis results of ETP-I & ETP-IV treated effluent samples collected simultaneously by MoEF recognized laboratory are meeting the prescribed standards. Analysis reports are enclosed as Attachment-IV. As regards Waste water generation and treatment, pollution load calculation for effluent, treated effluent at final discharge point, domestic waste water treatment details and analysis of treated domestic effluent, the committee has concluded that all parameters are meeting the standards.
8	The industry shall ensure that values of parameters of Online Stack monitoring systems are within the Board standards.	Not Complied Refinery has provided CEMS to 32 out of the 35 stacks to monitor PM, SO ₂ , NO _x and CO on real-time basis and connected to APPCB Server.	Complied. The total number of stacks in refinery are 35. OCEMS are provided for 32 stacks. It is to be


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Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
		CEMS for measuring hydrocarbons to be installed.	<p>noted that the following 3 stacks attached to</p> <ol style="list-style-type: none"> 1. PP-I utility boiler (WIL-8) 2. CPP HRSG-I 3. CPP HRSG-II <p>are not operational for past few years since these are no more required for operation of the Refinery and accordingly and are planned for dismantling . Hence, the continuous on-line stack monitoring facilities and their connectivity are not provided in relation to these 3 unused stacks.</p> <p>Hence, the compliance has to be seen from perspective of 32 OCEMS for the functioning 32 stacks only.</p> <p>CEMS for measuring hydrocarbons is not stipulated for petroleum refineries and hence, not a violation.</p>
9	The industry shall ensure that values of continuous Ambient Air Quality Monitoring (CAAQM) station are within the standards.	<p>Not Complied</p> <p>Joint committee has carried out ambient air quality monitoring within & outside the refinery during inspection and found that PM10 and PM 2.5 values are exceeding the 24Hrs avg standard limit.</p> <p>Though the concentration of SO2 & NOx are not exceeding the 24Hrs avg standard limit, the values are considerably higher in comparison with that of the concentration elsewhere in</p>	<p>Complied.</p> <p>PM10 and PM2.5 values most of the time exceed the maximum prescribed limits in the entire Visakhapatnam city and therefore HPCL is not responsible for the same. This has been explained in the submissions at Paragraph 15 of Objections to the Report of Joint</p>


 श्री. भगवान
G. BHAGAVAN
 महाप्रबंधक - तकनीकी
 Dy. General Manager-Technical
 एच.पी.सी.एल. लिमिटेड, विसाखपट्टनम
 H.P.C.L.

Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
		Visakhapatnam	<p>Committee dated 17.06.2021. Visakhapatnam is an industrial town having various other industries. Needless to state that various causes are attributable to increase in PM10 level, such as vehicular pollution, Port activities, Construction works, industrial activities etc., in Visakhapatnam.</p> <p>The concentration of SO2 & NOx are not exceeding the prescribed standards as per CFO.</p> <p>Hence, this condition./direction is complied with by this Respondent.</p>
10	The industry shall submit their preparedness plan for the use of low Sulphur fuels in case of bad weather conditions.	<p>Complied Refinery has used low Sulphur containing fuels like fuel gas,LSHS & CPP naphtha during the year 2020. & CPP naphtha during the year 2020. An amount of 2.98tons/day of SO2 has been emitted by the refinery during the year, 2020 by way of burning of low Sulphur containing fuels (Table 7.3) Hence not exceeding the emission load of 11.5 TPD</p>	
11	The Industry shall comply with the CFO Conditions	<p>Not Complied Under implementation of the condition of CFO order dated 09.03.2021.</p>	<p>Complied. CFO conditions are being complied with. Latest CFO compliance status is enclosed as Attachment-II.</p>
12	The contaminated storm water shall not be let	<p>Complied Not observed any unauthorized discharge of</p>	


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 उप महाप्रबंधक - तकनीकी
 Dy. General Manager-Technic
 एच.पी.सी.एल. - विशाख रिफाइनरी
 H.P.C.L - Visakh Refinery

Sl.	Condition	Observations of Joint Committee during Inspection	HPCL Reply
	outside the industry premises.	untreated effluent outside the industry premises during inspection	
13	The preventive maintenance of VOC condensers shall be taken up at regular intervals	Complied Not Applicable at present as there is no VOC condenser in the project area.	
14	The industry shall submit BG of Rs.64 Lakhs towards the compliance of above directions within 15 days for valid of one year.	Complied	


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 H.P.C.L - Visakh Refinery



SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

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Branch Office : 2-53, Mahipala Street, Yanam - 533464.

Recognized by Govt. of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET



Ref: SVELC/HPCL-VR/21-03/001

Date: 08-04-2021

NAME AND ADDRESS : **Mr. G.Bhagavan, DGM – Technical,
M/s. Hindustan Petroleum Corporation Ltd.,
Visakh Refinery, Post Box No.15,
Visakhapatnam – 530 011.**

SAMPLE PARTICULARS : **EFFLUENT**

SOURCE OF COLLECTION : **ETP-I DMF Outlet**

SAMPLE COLLECTED BY : **SVELC**

QUANTITY OF SAMPLE : **3 lts**

TYPE OF CONTAINER : **2 PVC Containers and 1 Glass Container each 1ltr**

DATE OF COLLECTION : **26-03-2021**

TEST REPORT

S. No.	Parameter	Unit	Result	Limits	Method followed
1.	pH	--	6.97	6.5 – 8.5	APHA, 4500-H+B
2.	Total Suspended Solids – TSS	mg/l	10	20	APHA, 2540-D
3.	Chemical Oxygen Demand – COD	mg/l	52	125	APHA, 5220-B
4.	Bio-Chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	11	15	IS 3025, Part 44
5.	Oil & Grease	mg/l	1.0	5.0	APHA, 5520-D, 5-38
6.	Phenols as C ₆ H ₅ OH	mg/l	0.05	0.35	APHA, 5530-C
7.	Sulphides as S	mg/l	0.12	0.5	APHA, 4500S ² D
8.	Cyanide as CN	mg/l	<0.01	0.2	APHA, 4500-CN - E
9.	Ammonia as N	mg/l	0.47	15.0	IS 3025, Part 34
10.	Total Kjeldahl Nitrogen	mg/l	1.16	40	IS 3025, Part 34
11.	Phosphorus as P	mg/l	0.04	3.0	APHA, 4500 P- C
12.	Hexavalent Chromium as Cr ⁺⁶	mg/l	BDL	0.1	APHA, 3500 Cr - B
13.	Total Chromium as Cr	mg/l	<0.01	2.0	APHA, 3120-B
14.	Lead as Pb	mg/l	<0.01	0.1	APHA, 3120-B
15.	Mercury as Hg	mg/l	<0.01	0.01	APHA, 3120-B
16.	Zinc as Zn	mg/l	<0.01	5.0	APHA, 3120-B
17.	Nickel as N	mg/l	<0.01	1.0	APHA, 3120-B
18.	Copper as Cu	mg/l	<0.01	1.0	APHA, 3120-B
19.	Vanadium as V	mg/l	<0.01	<0.01	APHA, 3120-B
20.	Benzene	mg/l	<0.01	0.1	APHA, 6410-B
21.	Benzo pyrene	mg/l	<0.01	0.2	APHA, 6440-B

*BDL – Below Detectable Limit

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017 and IS 3025 RA: 2014

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SV ENVIRO LABS & CONSULTANTS



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(Environmental Engineers & Consultants in Pollution Control)

Corporate Office : Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012
& Laboratory www.svenviolabs.com, Ph:0891-2755528, Cell: +91 9440338628
info@svenviolabs.com, svenviro_labs@yahoo.co.in

Branch Office : 2-53, Mahipala Street, Yanam - 533464.

Recognized by Govt.of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET



Ref: SVELC/HPCL-VR/21-03/002

Date: 08-04-2021

NAME AND ADDRESS : **Mr. G.Bhagavan, DGM – Technical,
M/s. Hindustan Petroleum Corporation Ltd.,
Visakh Refinery, Post Box No.15,
Visakhapatnam – 530 011.**

SAMPLE PARTICULARS : **EFFLUENT**

SOURCE OF COLLECTION : **ETP-IV ACF Outlet**

SAMPLE COLLECTED BY : **SVELC**

QUANTITY OF SAMPLE : **3 lts**

TYPE OF CONTAINER : **2 PVC Containers and 1 Glass Container each 1ltr**

DATE OF COLLECTION : **26-03-2021**

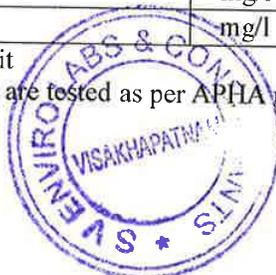
TEST REPORT

S. No.	Parameter	Unit	Result	Limits	Method followed
1.	Ph	--	7.72	6.5 – 8.5	APHA, 4500-H+B
2.	Total Suspended Solids – TSS	mg/l	12	20	APHA, 2540-D
3.	Chemical Oxygen Demand – COD	mg/l	69.5	125	APHA, 5220-B
4.	Bio-Chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	12.0	15	IS 3025, Part 44
5.	Oil & Grease	mg/l	1.5	5.0	APHA, 5520-D, 5-38
6.	Phenols as C ₆ H ₅ OH	mg/l	0.12	0.35	APHA, 5530-C
7.	Sulphides as S	mg/l	0.08	0.5	APHA, 4500S ² D
8.	Cyanide as CN	mg/l	<0.01	0.2	APHA, 4500-CN - E
9.	Ammonia as N	mg/l	0.29	15.0	IS 3025, Part 34
10.	Total Kjeldahl Nitrogen	mg/l	1.58	40	IS 3025, Part 34
11.	Phosphorus as P	mg/l	0.10	3.0	APHA, 4500 P- C
12.	Hexavalent Chromium as Cr ⁺⁶	mg/l	BDL	0.1	APHA, 3500 Cr - B
13.	Total Chromium as Cr	mg/l	<0.01	2.0	APHA, 3120-B
14.	Lead as Pb	mg/l	<0.01	0.1	APHA, 3120-B
15.	Mercury as Hg	mg/l	<0.01	0.01	APHA, 3120-B
16.	Zinc as Zn	mg/l	<0.01	5.0	APHA, 3120-B
17.	Nickel as N	mg/l	<0.01	1.0	APHA, 3120-B
18.	Copper as Cu	mg/l	<0.01	1.0	APHA, 3120-B
19.	Vanadium as V	mg/l	<0.01	0.2	APHA, 3120-B
20.	Benzene	mg/l	<0.01	0.1	APHA, 6410-B
21.	Benzo pyrene	mg/l	<0.01	0.2	APHA, 6440-B

*BDL – Below Detectable Limit

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017 and IS 3025 RA: 2014


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HPCL-VISAKH REFINERY

STACKS EMISSION DATA

SOURCE	PARAMETER	NORM	ACTUAL
91-F-20 (DHT-HGU)	SO ₂ (mg/Nm ³)	1700.0	58.79
	NO ₂ (mg/Nm ³)	450.0	42.5
	CO (mg/Nm ³)	200.0	8.82
92-M-22 (DHT-SRU)	PM (mg/Nm ³)	100	24.0
	NO ₂ (mg/Nm ³)	350.0	20.0
	CO (mg/Nm ³)	150.0	57.84
75-F51 (FCCNHT 2nd HD)	SO ₂ (mg/Nm ³)	50	35.4
	NO ₂ (mg/Nm ³)	350	112.3

<p>హిందూస్థాన్ పేట్రోలియం కార్పొరేషన్ లిమిటెడ్ (పాబ్లిక్ ట్రస్ట్ సంస్థ) విశాఖ రిఫైనరీ మల్కాపూరు విశాఖపట్నం-530011</p>	<p>HINDUSTAN PETROLEUM CORPORATION LIMITED (A Govt. of India Enterprise) VISAKH REFINERY MALKAPURAM VISAKHAPATNAM-530011</p>	<p>హిందూస్థాన్ పేట్రోలియం కార్పొరేషన్ లిమిటెడ్ (పాబ్లిక్ ట్రస్ట్ సంస్థ) విశాఖ రిఫైనరీ మల్కాపూరు విశాఖపట్నం-530011</p>
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PRAGATHI LABS & CONSULTANTS PVT.LTD.

(LAB RECOGNISED BY MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

(ISO 45001:2018, OHSAS 18001:2007)

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Sanath Nagar, Hyderabad – 500 018, Tele Fax : 040-23717213
E-mail:info@pragathilabs.com Website: www.pragathilabs.com

TEST REPORT

Industry Name	Hindustan Petroleum Corporation Limited		
Address	Visakh Refinery, Malkapuram, Visakhapatnam-530 011		
Phone No.	0891-2894825/4818	Kind attention to: Sri Gudala Bhagavan DGM – Technical	
Fax No.	0891-2759861		
Date of Reporting	03 rd September, 2021	Nature of the Sample	Fuel Gases
Our Ref. No.	Pra/Env/HPCL (Stack 1-23) August, 2021	No. of Samples	23
P.O. No.	20000433-HB/PR200066-HP/LOA/AG	Method of Analysis	IS: 11255
Parameters	Temperature, Velocity, PM, SO ₂ , NO _x , HC, CO, H ₂ S, Ni & V		

STACK GAS EMISSION ANALYSIS

S. No.	Unit	Stack type	Date of Monitoring	Stack details					Stack emissions								
				Height	Dia.	Area	Temp	Velocity	PM	SO ₂	NO _x	CO	H ₂ S	HC	Ni	V	
				m	m	m ²	°C	m/s	mg/Nm ³								
1	CDU-I	2-F-1	03-08-2021	60	1.40	1.539	185	5.4	31.8	290	76	22	--	21	BDL	BDL	
2	CDU-I	2-F-2	03-08-2021	60	1.00	0.785	232	4.6	33.6	270	70	24	--	19	BDL	BDL	
3	CDU-I	2-F-4	03-08-2021	60	1.60	2.01	172	4.4	34.5	252	72	23	--	20	BDL	BDL	
4	CDU-II	11-F-01	12-08-2021	60	2.55	5.104	204	5.3	35.2	260	82	21	--	22	BDL	BDL	
5	CDU-II	12-F-01	12-08-2021	60	1.60	2.01	225	4.8	32.8	215	78	27	--	23	BDL	BDL	
6	FCCU-I	4-F-51	24-08-2021	60	2.18	3.733	206	2.4	21.7	180	62	30	--	24	BDL	BDL	
7	DHT	90-F-01/2	31-08-2021	60	3.05	7.309	148	3.7	23.6	365	75	26	--	19	BDL	BDL	
8	DHT- HGU	91-F-20	31-08-2021	60	2.15	3.63	110	5.4	9.2	70	76	17	--	14	BDL	BDL	
9	DHDS	60-F-01	26-08-2021	60	1.34	1.410	234	3.6	36.4	108	81	26	--	21	BDL	BDL	
10	DHDS	61-F-11	26-08-2021	60	1.60	2.011	162	5.2	30.5	90	86	28	--	20	BDL	BDL	
11	NHT	72- F-01/02	04-08-2021	60	1.50	1.767	184	3.1	3.7	40	62	25	--	18	BDL	BDL	
12	CCR	74-F-1/2/3/4	04-08-2021	60	3.37	8.923	165	3.0	4.0	30	57	22	--	17	BDL	BDL	
13	CPP	HRSG-III	05-08-2021	60	3.00	7.065	154	13.1	18.2	54	69	24	--	16	BDL	BDL	
14	CPP	HRSG-V	05-08-2021	60	3.00	7.065	158	13.4	19.6	52	82	23	--	18	BDL	BDL	
15	CPP	HRSG-VI	05-08-2021	60	3.00	7.065	163	13.2	18.7	55	83	22	--	19	BDL	BDL	
16	PP-1	IBH	24-08-2021	60	2.40	4.525	165	3.5	35.5	104	95	34	--	17	BDL	BDL	
17	DHT- HGU	91-F-01	31-08-2021	60	1.30	1.327	262	0.4	9.2	36	72	29	--	13	--	--	
18	FCC NHT	75-F-01	11-08-2021	60	1.01	0.801	268	2.7	3.9	41	78	32	--	23	--	--	
19	FCC NHT	75-F-51	11-08-2021	60	1.35	1.430	208	1.3	3.8	33	70	31	--	24	--	--	
20	FCCU-I	FGD-I	24-08-2021	60	1.76	2.433	66	12.4	28.6	60	76	30	--	20	BDL	BDL	
21	DHDSSRU	65-X-001	25-08-2021	60	1.21	1.150	212	2.8	19.1	86	69	22	8.2	16	--	--	
22	DHDSSRU	79-X-310	25-08-2021	60	1.01	0.801	228	3.6	25.4	58	65	25	8.4	18	--	--	
23	DHT-SRU	92-M-22	18-08-2021	60	1.50	1.767	252	5.1	8.6	116	62	20	8.5	14	--	--	

Stack emissions Revised Norm (mg/Nm³)

	Fuel Type	SO ₂	NO _x	PM	CO	Ni & V	H ₂ S
Furnaces & CPP	Gas	50	350	10	150		
	Liquid	1700	450	100	200	5	---
FCC Regenerators	---	1700	450	100	400	5	---
SRU'S (65-X-01 & 79-X-310)	---	---	350	---	150	---	15

Methodology for testing of pollutants

PM	Methods for measurement of emissions from stationary sources	IS: 11255	(Part I)	1985
SO ₂	Methods for measurement of emissions from stationary sources	IS: 11255	(Part II)	1985
NO _x	Methods for measurement of air pollution	IS: 11255	(Part VII)	2005
HC&CO	GC Method	-	-	-

T. Maruthi
Analyst Signatory
(T.Maruthi)

M. Ravi Kiran
Authorized Signatory
(M. Ravi Kiran)



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TEST REPORT

Industry Name	Hindustan Petroleum Corporation Limited		
Address	Visakh Refinery, Malkapuram, Visakhapatnam-530 011		
Phone No.	0891-2894825/4818	Kind attention to: Sri Gudala Bhagavan	
Fax No.	0891-2759861	DGM – Technical	
Date of Reporting	4 th October,, 2021	Nature of the Sample	Fuel Gases
Our Ref. No.	Pra/Env/HPCL (Stack 1-23) September,2021	No. of Samples	23
P.O. No.	20000433-HB/PR200066-HP/LOA/AG	Method of Analysis	IS: 11255
Parameters	Temperature, Velocity, PM, SO ₂ , NO _x , HC, CO, H ₂ S, Ni & V		

STACK GAS EMISSION ANALYSIS

S. No.	Unit	Stack type	Date of Monitoring	Stack details					Stack emissions							
				Height	Dia.	Area	Temp	Velocity	PM	SO ₂	NO _x	CO	H ₂ S	HC	Ni	V
				m	m	m ²	°C	m/s	mg/Nm ³							
1	CDU-I	2-F-1	14-09-2021	60	1.40	1.539	178	5.6	33.2	275	68	20	-	23	BDL	BDL
2	CDU-I	2-F-2	14-09-2021	60	1.00	0.785	216	4.5	30.3	252	62	21	-	21	BDL	BDL
3	CDU-I	2-F-4	14-09-2021	60	1.60	2.01	185	4.6	31.8	240	65	20	-	22	BDL	BDL
4	CDU-II	11-F-01	17-09-2021	60	2.55	5.104	210	5.4	32.6	235	74	18	-	24	BDL	BDL
5	CDU-II	12-F-01	17-09-2021	60	1.60	2.01	236	4.9	30.4	204	71	23	-	20	BDL	BDL
6	FCCU-I	4-F-51	29-09-2021	60	2.18	3.733	215	3.3	20.2	162	57	24	-	21	BDL	BDL
7	DHT	90-F-01/2	30-09-2021	60	3.05	7.309	160	3.8	21.3	340	68	21	-	17	BDL	BDL
8	DHT- HGU	91-F-20	30-09-2021	60	2.15	3.63	135	5.2	8.6	76	70	19	-	16	BDL	BDL
9	DHDS	60-F-01	06-09-2021	60	1.34	1.410	224	3.7	34.7	96	73	21	-	19	BDL	BDL
10	DHDS	61-F-11	06-09-2021	60	1.60	2.011	176	5.3	28.1	82	76	22	-	18	BDL	BDL
11	NHT	72- F-01/02	20-09-2021	60	1.50	1.767	192	3.4	3.4	36	54	20	-	20	BDL	BDL
12	CCR	74-F-1/2/3/4	20-09-2021	60	3.37	8.923	174	3.8	3.8	32	51	17	-	18	BDL	BDL
13	CPP	HRSG-III	24-09-2021	60	3.00	7.065	158	13.5	17.5	48	62	20	-	15	BDL	BDL
14	CPP	HRSG-IV	24-09-2021	60	3.00	7.065	145	13.8	17.8	56	80	21	-	14	BDL	BDL
15	CPP	HRSG-V	24-09-2021	60	3.00	7.065	165	13.1	18.2	47	74	19	-	16	BDL	BDL
16	CPP	HRSG-VI	24-09-2021	60	3.00	7.065	170	12.8	17.6	50	76	20	-	17	BDL	BDL
17	PP-1	IBH	29-09-2021	60	2.40	4.525	182	3.2	32.2	95	87	30	-	18	BDL	BDL
18	FCC NHT	75-F-01	21-09-2021	60	1.01	0.801	245	2.8	3.3	37	71	18	-	21	-	-
19	FCC NHT	75-F-51	21-09-2021	60	1.35	1.430	216	1.4	3.5	30	65	27	-	20	-	-
20	FCCU-I	FGD-I	29-09-2021	60	1.76	2.433	66	12.6	25.3	52	70	26	-	14	BDL	BDL
21	DHDSSRU	65-X-001	22-09-2021	60	1.21	1.150	220	2.7	18.8	78	62	19	8.0	18	-	-
22	DHDSSRU	79-X-310	22-09-2021	60	1.01	0.801	232	3.4	23.1	52	60	21	8.2	16	-	-
23	DHT-SRU	92-M-22	30-09-2021	60	1.50	1.767	265	5.4	8.1	108	57	17	8.1	15	-	-

Stack emissions Revised Norm (mg/Nm³)

	Fuel Type	SO ₂	NO _x	PM	CO	Ni & V	H ₂ S
Furnaces & CPP	Gas	50	350	10	150		
	Liquid	1700	450	100	200	5	-
FCC Regenerators	-	1700	450	100	400	5	-
SRU'S (65-X-01 & 79-X-310)	-	-	350	-	150	-	15

Methodology for testing of pollutants

PM	Methods for measurement of emissions from stationary sources	IS: 11255	(Part I)	1985
SO ₂	Methods for measurement of emissions from stationary sources	IS: 11255	(Part II)	1985
NO _x	Methods for measurement of air pollution	IS: 11255	(Part VII)	2005
HC&CO	GC Method	-	-	-

MD. Azeem
Analyst Signatory
(MD. Azeem)

M. Ravi Kiran
Authorized Signatory
(M. Ravi Kiran)



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
(भारत सरकार संस्थान) रजिस्टर्ड आफिस 17 जमशेदजी टाटा रोड, मुंबई - 400 020
HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE: 17 JAMSHEDJI TATA ROAD, MUMBAI-400 020
CIN : L23201MH1952GOI008858



विशाख रिफाइनरी, पोस्ट बाक्स नं. 15, विशाखपट्टनम - 530 011 (आंध्रप्रदेश), फोन - 2895000, 2895100
VISAKH REFINERY, POST BOX NO. 15, VISAKHAPATNAM-530 011 (A.P.), PHONES : 2895000, 2895100

The Environmental Engineer,
A.P. Pollution Control Board - Regional Office,
D. No. 39-33-20/4/1
Beside RTA office
Vuda Colony, Madhavadhara,
Visakhapatnam-530018.

Date: November 17 , 2021
Ref: TSD/PS&E/APPCB/224/21

Sub: SO₂ Emission from HPCL-Visakh Refinery based on Crude and Product Sulphur Balance.

Dear Sir,

Please find the enclosed average daily SO₂ emission based on crude and product Sulphur balance for the month of September 2021.

With best regards,

Yours truly,

G Bhagavan
DGM – Technical



HPCL-VISAKH REFINERY (PS&E DIVISION)

Overall Refinery Sulphur Balance: SEP 2021

	Crude run (TMT)	Sulphur content (wt%)	Sulphur in (MT)	PRODUCTS	Production (TMT)	Sep 2021		Days
						Sulphur Standard (wt%)	Sulphur Actual (wt%)	
CRUDE								
Low Sulphur :								
MBH	98.78	0.13	130.39	Propylene	2.6	0.005	0.004	0.10
Cambay Basin	25.74	0.05	12.36	LPG	18.3	0.015	0.011	2.05
Brass Light	39.47	0.15	60.79	Naphtha	8.9	0.28	0.021	1.84
Okwuibome	68.18	0.09	61.37	MS EVI	108.6	0.001	0.001	0.66
High Sulphur :								
AXL	223.84	1.04	2327.89	ATF	0.5	0.3	0.045	0.22
AL	0.11	1.93	2.09	SKO	6.0	0.1	0.004	0.22
DAS	0.00	0.00	0.00	HSD	0.0	0.8	0.000	0.00
AH	19.11	3.22	615.19	HSD E VI	240.3	0.001	0.001	1.30
Basrah Light	70.66	2.66	1879.53	HFHSD	1.4	0.2	0.528	7.20
				LDO	9.0	-	0.849	76.01
				JBO	0.6	-	2.100	12.99
				MTO	2.1	0.11	0.060	1.26
				FO	63.6	4	2.170	1380.80
				VLS FO	5.2	0.5	0.361	18.87
				LSHS	0.0	-	0.528	0.00
				BIT 80/100 & 60/70	19.1	-	7.80	1486.54
				Sulphur	1.8	-	100.00	1771.54
				ISD	6.9	-	2.92	201.06
				VGO	0.0	-	1.07	0.00
				Fuel	45.8	-	0.23	105.29
				Loss	5.2	-	0.05	2.58
TOTAL	545.9		5089.6	TOTAL	545.9			5070.5
SUMMARY								
Sulphur in:			5089.60	MT				
Sulphur out:			5070.54	MT				
Unaccounted sulphur quantity			19.06	MT				
This unaccounted quantity plus the sulphur present in "Fuel" will be released in the form of SO ₂ =							8.5	MT Per day



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार संस्थान) रजिस्टर्ड आफिस 17 जमशेदजी टाटा रोड, मुंबई - 400 020

HINDUSTAN PETROLEUM CORPORATION LIMITED



(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE: 17 JAMSHEDJI TATA ROAD, MUMBAI-400 020
CIN : L23201MH1952GOI008858

विशाख रिफाइनरी, पोस्ट बाक्स नं.15, विशाखपट्टनम - 530 011 (आंध्रप्रदेश), फोन - 2895000, 2895100
VISAKH REFINERY, POST BOX NO.15, VISAKHAPATNAM-530 011 (A.P.), PHONES : 2895000, 2895100

The Environmental Engineer,
A.P. Pollution Control Board - Regional Office,
D. No. 39-33-20/4/1
Beside RTA office
Vuda Colony, Madhavadhara,
Visakhapatnam-530018.

Date: December 02 , 2021
Ref: TSD/PS&E/APPCB/224/21

Sub: SO₂ Emission from HPCL-Visakh Refinery based on Crude and Product Sulphur Balance.

Dear Sir,

Please find the enclosed average daily SO₂ emission based on crude and product Sulphur balance for the month of October 2021

With best regards,

Yours truly,

G Bhagavan
DGM – Technical



HPCL-VISAKH REFINERY (PS&E DIVISION)

Overall Refinery Sulphur Balance: OCTOBER 2021

Oct 2021

31

Days

	Crude run (TMT)	Sulphur content (wt%)	Sulphur in (MT)		Production (TMT)	Sulphur Standard (wt%)	Sulphur Actual (wt%)	Sulphur out (MT)
CRUDE				PRODUCTS				
Low Sulphur :								
Ravva	54.51	0.05	24.53	Propylene	4.0	0.005	0.004	0.15
MH	257.11	0.13	334.24	LPG	27.6	0.015	0.012	3.23
Brass Light	27.74	0.15	42.16	Naphtha	37.2	0.28	0.010	3.72
Okwuibome	34.03	0.09	30.62	MS EVI	144.1	0.001	0.001	0.95
Cambay Basin	25.03	0.04	8.76					
Mirri Light	26.18	0.32	84.03					
High Sulphur :								
AXL	277.12	1.05	2909.80	ATF	8.0	0.3	0.062	4.97
AL	16.12	1.98	319.19	SKO	14.4	0.1	0.003	0.45
AH	36.35	3.10	1126.91	HSD	0.0	0.8	0.000	0.00
Basrah Light	99.10	2.83	2804.44	HSD E VI	344.7	0.001	0.001	2.17
				HFHSD	4.1	0.2	0.059	2.42
				LDO	22.3	-	0.815	181.81
				JBO	3.1	-	2.100	65.43
				MTO	2.1	0.11	0.058	1.20
				FO	78.9	4	2.638	2080.65
				VLS FO	0.0	0.5	0.000	0.00
				LSHS	18.3	-	0.492	89.83
				BIT 80/100 & 60/70	34.1	-	7.60	2588.48
				Sulphur	2.3		100.00	2347.94
				ISD	-39.9	-	1.84	-734.72
				VGO	83.6		1.09	909.85
				Fuel	56.6	-	0.21	118.76
				Loss	8.0	-	0.05	3.98
TOTAL	853.3		7684.7	TOTAL	853.3			7671.3

SUMMARYSulphur in: **7684.7 MT**Sulphur out: **7671.3 MT**Unaccounted sulphur quantity **13.4 MT**This unaccounted quantity plus the sulphur present in "Fuel" will be released in the **8.8 MT Per day**



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार संस्थान) रजिस्टर्ड ऑफिस 17 जमशेदजी टाटा रोड, मुंबई - 400 020

HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE: 17 JAMSHEDJI TATA ROAD, MUMBAI - 400 020

CIN : L23201MH1952GOI008858

विशाख रिफाइनरी, पोस्ट बाक्स नं. 15, विशाखपट्टनम -530 011 (आंध्रप्रदेश), फोन : 2895000, 2895100
VISAKH REFINERY, POST BOX NO. 15, VISAKHAPATNAM-530 011 (A.P.), PHONES : 2895000, 2895100

The Environmental Engineer,
A.P. Pollution Control Board - Regional Office,
D.No. 39-33-20/4/1, Beside RTA Office,
VUDA colony, Madhavadhara,
Visakhapatnam-530018.

Date: January 13, 2021
Ref: TSD/PS&E/APPCB/119/21

Sir,

Sub: Import of Hazardous Chemicals – HPCL, Visakh Refinery

Vide Rule 18(2) of Manufacture, Storage & Import of Hazardous Chemical Rules, 1989, please find attached the crude oil import information for the month of January-2021 as Annexure-I.

With best regards,

Yours truly,


brn/ss


G. Bhagavan
DGM-Technical

Annexure-I

1	Name and address of the person receiving the consignment in India.	Mr. V Ratan Raj, Executive Director, M/s Hindustan Petroleum Corporation Limited, Visakh Refinery, P.B.No.15, Malkapuram, Visakhapatnam-530011.
2	The port of entry in India	Visakhapatnam
3	Mode of transport from the exporting country to India	Shipment
4	Quantity of Crude being imported in January – 2021	746 TMT
5	Product safety information	Material safety data sheet of Crude oil is enclosed.



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार संस्थान) रजिस्टर्ड ऑफिस 17 जमशेदजी टाटा रोड, मुम्बई - 400 020
HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE: 17 JAMSHEDJI TATA ROAD, MUMBAI - 400 020

CIN : L23201MH1952GOI008858

विशाख रिफाइनरी, पोस्ट बाक्स नं. 15, विशाखपट्टनम -530 011 (आंध्रप्रदेश), फोन : 2895000, 2895100
VISAKH REFINERY, POST BOX NO. 15, VISAKHAPATNAM-530 011 (A.P.), PHONES : 2895000, 2895100

The Environmental Engineer,
A.P. Pollution Control Board - Regional Office,
D.No. 39-33-20/4/1, Beside RTA Office,
VUDA colony, Madhavadhara,
Visakhapatnam-530018.

Date: February 17, 2021
Ref: TSD/PS&E/APPCB/133/21

Sir,

Sub: Import of Hazardous Chemicals – HPCL, Visakh Refinery

Vide Rule 18(2) of Manufacture, Storage & Import of Hazardous Chemical Rules, 1989, please find attached the crude oil import information for the month of February-2021 as Annexure-I.

With best regards,

Yours truly,

G. Bhagavan
DGM-Technical

brn/

Annexure-I

1	Name and address of the person receiving the consignment in India.	Mr. V Ratan Raj, Executive Director, M/s Hindustan Petroleum Corporation Limited, Visakh Refinery, P.B.No.15, Malkapuram, Visakhapatnam-530011.
2	The port of entry in India	Visakhapatnam
3	Mode of transport from the exporting country to India	Shipment
4	Quantity of Crude being imported in February – 2021	730 TMT
5	Product safety information	Material safety data sheet of Crude oil is enclosed.



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(भारत सरकार संस्थान) रजिस्टर्ड ऑफिस 17 जमशेदजी टाटा रोड, मुम्बई - 400 020

HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE: 17 JAMSHEDJI TATA ROAD, MUMBAI - 400 020

CIN : L23201MH1952GOI008858

विशाख रिफाइनरी, पोस्ट बाक्स नं. 15, विशाखपट्टनम -530 011 (आंध्रप्रदेश), फोन : 2895000, 2895100
VISAKH REFINERY, POST BOX NO. 15, VISAKHAPATNAM-530 011 (A.P.), PHONES : 2895000, 2895100

The Environmental Engineer,
A.P. Pollution Control Board - Regional Office,
D.No. 39-33-20/4/1, Beside RTA Office,
VUDA colony, Madhavadhara,
Visakhapatnam-530018.

Date: March 15, 2021
Ref: TSD/PS&E/APPCB/147/21

Sir,

Sub: Import of Hazardous Chemicals – HPCL, Visakh Refinery

Vide Rule 18(2) of Manufacture, Storage & Import of Hazardous Chemical Rules, 1989, please find attached the crude oil import information for the month of March-2021 as Annexure-I.

With best regards,

Yours truly,

G. Bhagavan
DGM-Technical

om/15

Annexure-I

1	Name and address of the person receiving the consignment in India.	Mr. V Ratan Raj, Executive Director, M/s Hindustan Petroleum Corporation Limited, Visakh Refinery, P.B.No.15, Malkapuram, Visakhapatnam-530011.
2	The port of entry in India	Visakhapatnam
3	Mode of transport from the exporting country to India	Shipment
4	Quantity of Crude being imported in March – 2021	686 TMT
5	Product safety information	Material safety data sheet of Crude oil is enclosed.



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
Hindustan Petroleum Corporation Limited
(A Maharatna Company)

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Environment Compliance, Environmental Statements and monitoring reports:

- Environment Clearance
- Environment Monitoring Report Q4 2018-19
- Compliance Report - MOEF Chandigar
- Environment Monitoring Report H1 2018-19

Visakh Refinery Modernization Project (VRMP)

Environment Compliance, Environmental Statements and monitoring reports:

- VRMP EC compliance report (1st April 21 to 30th September 21)
- VRMP EC compliance report (1st Oct 20 to 31st march 21)
- Environment Statement (Form-V) of Visakh Refinery
- Environment Clearance
- Compliance Statement 1 Apr 18-30th Sep 18
- Compliance Statement 1 Oct 18-31st Mar 19
- Compliance Statement 1 Oct 19-31st Mar 20
- Compliance Statement 1 Apr 19-30th Sep 19
- Compliance Statement 1 Apr 20-30th Sep 20

MDPL Capacity Expansion & Palanpur Vadodara Pipeline Extension Project

Environment Compliance, Environmental Statements and monitoring reports:

- Environment Clearance



Attachment-XIII

SI No.	Time	VR CAAMS Stations PM-10			GVM Corporation Visakhapatnam - APPCB	VR CAAMS Stations PM-2.5			GVM Corporation Visakhapatnam - APPCB
		CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM10	CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM2.5
1	2020-12-01	200	120	122	106	61	123	38	59
2	2020-12-02	199	166	126	109	64	75	61	56
3	2020-12-03	214	211	187	118	71	105	55	66
4	2020-12-04	217	134	141	114	86	48	53	71
5	2020-12-05	238	136	129	123	71	44	54	76
6	2020-12-06	140	87	99	97	52	30	39	57
7	2020-12-07	176	117	138	95	61	40	53	53
8	2020-12-08	187	138	189	138	64	46	73	61
9	2020-12-09	209	161	198	211	67	52	74	81
10	2020-12-10	199	154	196	294	73	55	82	114
11	2020-12-11	235	177	202	291	315	65	87	122
12	2020-12-12	210	175	183	242	74	61	74	108
13	2020-12-13	239	169	189	255	89	64	79	116
14	2020-12-14	197	156	187	216	81	61	78	105
15	2020-12-15	198	127	149	144	83	91	67	91
16	2020-12-16	161	103	119	116	61	45	48	66
17	2020-12-17	198	130	136	128	82	59	64	77
18	2020-12-18	209	144	141	145	89	66	69	91
19	2020-12-19	190	134	146	146	78	63	67	85
20	2020-12-20	195	141	143	151	74	63	63	80
21	2020-12-21	188	154	183	248	72	70	79	99
22	2020-12-22	238	166	202	296	76	75	79	109
23	2020-12-23	199	161	204	258	73	68	79	108
24	2020-12-24	208	161	204	281	85	78	91	121
25	2020-12-25	246	182	241	300	114	99	123	158
26	2020-12-26	259	184	255	296	121	104	135	157
27	2020-12-27	233	147	218	268	112	93	121	143
28	2020-12-28	288	182	210	266	161	97	112	137
29	2020-12-29	239	178	211	248	103	90	105	119
30	2020-12-30	219	141	183	184	88	74	85	91
31	2020-12-31	239	144	186	178	92	81	81	103
32	2021-01-01	241	164	203	215	106	92	100	117
33	2021-01-02	219	183	242	210	106	107	122	115
34	2021-01-03	237	151	205	201	109	93	105	111
35	2021-01-04	179	112	151	146	62	62	51	80
36	2021-01-05	171	116	142	162	111	66	64	80
37	2021-01-06	170	115	133	127	69	59	55	72
38	2021-01-07	162	108	163	127	104	62	54	63
39	2021-01-08	114	90	81	80	40	49	30	38
40	2021-01-09	137	112	118	94	52	60	51	48
41	2021-01-10	143	116	119	171	53	62	53	67
42	2021-01-11	212	170	170	262	73	75	75	104

SI No.	Time	VR CAAMS Stations PM-10			GVM Corporation Visakhapatnam - APPCB	VR CAAMS Stations PM-2.5			GVM Corporation Visakhapatnam - APPCB
		CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM10	CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM2.5
43	2021-01-12	191	142	187	264	72	74	77	101
44	2021-01-13	250	157	173	263	267	107	97	132
45	2021-01-14	145	100	126	135	65	69	62	77
46	2021-01-15	140	110	125	166	63	67	61	82
47	2021-01-16	131	251	128	152	56	234	59	70
48	2021-01-17	124	65	114	115	58	41	55	73
49	2021-01-18	174	117	141	134	75	71	65	84
50	2021-01-19	171	124	154	149	77	81	72	84
51	2021-01-20	237	278	213	229	87	185	90	101
52	2021-01-21	257	182	250	177	90	103	87	93
53	2021-01-22	190	136	164	157	81	85	83	93
54	2021-01-23	161	113	138	158	70	77	72	81
55	2021-01-24	177	143	176	177	75	91	87	91
56	2021-01-25	166	128	163	138	61	74	72	69
57	2021-01-26	135	106	136	127	52	66	60	63
58	2021-01-27	149	130	145	145	100	78	59	70
59	2021-01-28	115	134	164	172	72	85	74	82
60	2021-01-29	69	114	198	144	73	78	76	78
61	2021-01-30	185	144	190	200	71	91	77	88
62	2021-01-31	139	110	145	125	60	81	63	72
63	2021-02-01	218	146	205	183	304	104	103	111
64	2021-02-02	197	130	191	148	122	90	84	82
65	2021-02-03	171	202	231	235	40	135	73	80
66	2021-02-04	174	121	210	250	32	64	59	71
67	2021-02-05	174	129	207	237	36	66	64	76
68	2021-02-06	153	114	197	209	33	63	61	75
69	2021-02-07	145	117	187	194	37	68	68	71
70	2021-02-08	166	120	173	101	42	71	58	59
71	2021-02-09	176	131	211	190	50	82	81	85
72	2021-02-10	180	145	246	180	57	89	95	78
73	2021-02-11	167	142	207	141	50	88	85	74
74	2021-02-12	148	102	184	125	38	66	60	55
75	2021-02-13	112	90	154	94	23	52	52	31
76	2021-02-14	116	107	153	115	19	47	53	41
77	2021-02-15	174	140	224	123	27	57	66	43
78	2021-02-16	193	152	235	138	37	60	83	54
79	2021-02-17	180	135	179	142	49	71	72	69
80	2021-02-18	148	116	155	113	42	70	61	59
81	2021-02-19	150	99	153	103	37	57	53	52
82	2021-02-20	125	93	128	87	27	50	41	44
83	2021-02-21	132	98	126	101	32	52	44	50
84	2021-02-22	139	111	171	163	34	58	53	53
85	2021-02-23	203	157	239	221	50	72	87	77
86	2021-02-24	179	168	250	143	40	69	68	60
87	2021-02-25	201	174	252	131	42	67	82	53
88	2021-02-26	207	159	248	148	45	65	83	62

SI No.	Time	VR CAAMS Stations PM-10			GVM Corporation Visakhapatnam - APPCB	VR CAAMS Stations PM-2.5			GVM Corporation Visakhapatnam - APPCB
		CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM10	CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM2.5
89	2021-02-27	246	185	291	151	53	81	91	65
90	2021-02-28	144	121	185	134	29	46	65	52
91	2021-03-01	178	117	234	102	26	35	72	36
92	2021-03-02	202	131	264	140	36	46	83	46
93	2021-03-03	178	160	248	166	37	63	86	58
94	2021-03-04	191	223	249	158	33	71	61	52
95	2021-03-05	228	167	283	186	37	112	71	57
96	2021-03-06	253	208	345	155	40	53	81	46
97	2021-03-07	158	126	238	100	24	39	66	35
98	2021-03-08	127	96	188	70	141	27	51	22
99	2021-03-09	110	81	193	86	10	22	50	20
100	2021-03-10	138	93	243	88	19	19	59	20
101	2021-03-11	148	82	235	82	63	108	56	20
102	2021-03-12	147	116	254	88	18	140	64	26
103	2021-03-13	158	137	200	63	35	41	34	19
104	2021-03-14	106	91	128	53	18	37	21	15
105	2021-03-15	125	174	199	87	24	119	38	22
106	2021-03-16	155	151	251	102	98	61	69	43
107	2021-03-17	136	242	215	119	25	114	74	53
108	2021-03-18	144	135	134	120	30	63	65	52
109	2021-03-19	190	161	182	130	36	71	77	55
110	2021-03-20	186	164	185	155	45	70	85	69
111	2021-03-21	154	140	148	137	37	64	71	59
112	2021-03-22	217	194	194	162	48	74	73	55
113	2021-03-23	223	216	184	214	80	85	62	64
114	2021-03-24	250	186	182	245	95	135	68	81
115	2021-03-25	288	219	219	237	68	127	80	78
116	2021-03-26	308	269	230	197	79	132	76	70
117	2021-03-27	253	198	210	199	71	103	70	71
118	2021-03-28	203	166	174	178	60	89	64	66
119	2021-03-29	173	129	155	146	46	67	51	55
120	2021-03-30	189	124	176	152	42	62	59	51
121	2021-03-31	237	147	206	166	61	82	76	66
122	2021-04-01	242	163	203	161	75	93	81	83
123	2021-04-02	146	108	123	None	46	66	46	None
124	2021-04-03	115	116	109	None	33	63	26	None
125	2021-04-04	147	133	139	None	52	86	49	None
126	2021-04-05	115	135	125	111	34	55	28	38
127	2021-04-06	136	144	148	137	39	74	36	46
128	2021-04-07	173	146	171	134	43	72	42	42
129	2021-04-08	129	108	123	132	35	60	37	40
130	2021-04-09	105	117	101	102	29	62	31	34
131	2021-04-10	75	64	61	77	21	38	16	27
132	2021-04-11	87	97	76	70	24	54	24	24
133	2021-04-12	108	104	90	89	27	59	14	35
134	2021-04-13	NA	NA	NA	87	NA	NA	NA	30

Sl No.	Time	VR CAAMS Stations PM-10			GVM Corporation Visakhapatnam - APPCB	VR CAAMS Stations PM-2.5			GVM Corporation Visakhapatnam - APPCB
		CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM10	CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM2.5
135	2021-04-14	154	198	118	95	30	53	21	30
136	2021-04-15	101	91	84	111	28	39	36	35
137	2021-04-16	52	83	54	52	8	23	16	13
138	2021-04-17	50	63	44	39	9	21	6	10
139	2021-04-18	66	60	50	46	11	21	8	13
140	2021-04-19	96	91	83	84	25	34	23	26
141	2021-04-20	133	99	90	114	35	44	31	37
142	2021-04-21	125	73	86	85	29	32	26	29
143	2021-04-22	91	108	76	91	23	35	26	26
144	2021-04-23	101	165	105	101	27	45	38	31
145	2021-04-24	124	136	91	139	40	71	39	48
146	2021-04-25	136	130	120	76	36	46	46	33
147	2021-04-26	124	116	106	96	32	41	37	34
148	2021-04-27	132	106	113	101	33	39	35	34
149	2021-04-28	107	111	86	98	29	40	33	35
150	2021-04-29	94	102	78	82	28	36	25	31
151	2021-04-30	118	142	88	90	41	53	41	40
152	2021-05-01	89	82	76	94	34	35	28	30
153	2021-05-02	55	69	59	67	17	30	30	21
154	2021-05-03	67	81	75	64	18	30	33	20
155	2021-05-04	61	72	58	60	16	25	19	16
156	2021-05-05	45	52	48	65	11	23	13	14
157	2021-05-06	57	52	46	56	13	19	10	17
158	2021-05-07	25	31	25	28	6	8	7	8
159	2021-05-08	100	45	31	27	74	19	6	9
160	2021-05-09	35	32	57	40	8	17	15	12
161	2021-05-10	61	103	116	49	13	24	32	11
162	2021-05-11	40	52	115	37	9	18	43	11
163	2021-05-12	59	77	91	52	13	21	21	17
164	2021-05-13	76	40	108	47	14	15	39	13
165	2021-05-14	62	67	84	60	14	24	25	22
166	2021-05-15	33	47	46	36	8	15	9	15
167	2021-05-16	13	15	11	14	2	10	0	5
168	2021-05-17	24	48	49	24	4	15	2	7
169	2021-05-18	66	72	117	36	12	27	8	10
170	2021-05-19	67	56	126	60	13	22	17	15
171	2021-05-20	77	65	116	47	13	23	23	14
172	2021-05-21	104	96	96	55	71	58	34	28
173	2021-05-22	105	100	111	67	38	39	30	26
174	2021-05-23	143	115	143	105	68	43	43	44
175	2021-05-24	148	181	179	163	49	65	62	63
176	2021-05-25	164	252	228	184	40	57	73	50
177	2021-05-26	162	301	224	154	35	55	42	37
178	2021-05-27	168	211	224	168	46	54	61	63
179	2021-05-28	177	213	244	120	49	68	61	40
180	2021-05-29	123	155	165	134	27	39	25	31

Sl No.	Time	VR CAAMS Stations PM-10			GVM Corporation Visakhapatnam - APPCB	VR CAAMS Stations PM-2.5			GVM Corporation Visakhapatnam - APPCB
		CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM10	CAAMS-1 (SOUTH GATE)	CAAMS-2 (Store Yard)	CAAMS-3 (HLPH)	PM2.5
181	2021-05-30	143	125	177	120	36	47	41	44
182	2021-05-31	103	73	132	106	27	31	29	35
183	2021-06-01	102	115	122	71	29	45	28	31
184	2021-06-02	85	81	110	66	24	35	26	29
185	2021-06-03	91	79	94	65	22	33	21	24
186	2021-06-04	79	94	119	73	19	32	28	30
187	2021-06-05	62	72	118	50	13	26	29	17
188	2021-06-06	43	48	76	41	7	15	21	11
189	2021-06-07	100	70	156	64	26	28	35	26
190	2021-06-08	102	74	149	97	27	35	32	34
191	2021-06-09	118	76	108	98	22	31	33	33
192	2021-06-10	82	48	122	97	27	31	50	44
193	2021-06-11	66	51	111	77	21	24	45	31
194	2021-06-12	54	59	104	63	16	23	37	26
195	2021-06-13	82	67	119	101	20	26	36	34
196	2021-06-14	56	44	116	80	16	21	46	28
197	2021-06-15	67	54	112	96	16	20	32	28
198	2021-06-16	91	61	133	110	19	25	26	32
199	2021-06-17	91	52	121	91	17	21	19	23
200	2021-06-18	104	63	128	121	23	29	27	44
201	2021-06-19	156	108	194	162	27	42	31	39
202	2021-06-20	119	74	153	130	25	33	34	36
203	2021-06-21	182	156	288	151	37	51	52	47
204	2021-06-22	214	174	325	177	46	62	55	53
205	2021-06-23	125	91	139	129	32	41	25	40
206	2021-06-24	84	74	112	80	25	42	31	31
207	2021-06-25	81	100	79	86	22	43	24	30
208	2021-06-26	136	124	126	125	35	52	37	41
209	2021-06-27	79	68	73	93	25	37	24	30
210	2021-06-28	72	161	71	48	18	28	14	19
211	2021-06-29	123	68	115	83	27	30	30	30
212	2021-06-30	109	69	118	95	20	29	28	30